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A

JOURNEY

THROUGH

SPAIN

IN THE YEARS 1786 AND 1787;

WITH PARTICULAR ATTENTION

TO THE

AGRICULTURE, MANUFACTURES, COMMERCE, POPULATION, TAXES, AND REVENUE

OF THAT COUNTRY;

AND

REMARKS

IN PASSING THROUGH

A PART OF FRANCE.

BY JOSEPH TOWNSEND, A. M.
RECTOR OF PEWSEY, WILTS;
AND LATE OF CLARE-HALL, CAMBRIDGE.

IN THREE VOLUMES.—VOL. I.

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TO THE

EARL of WYCOMBE,

AS MOST COMPETENT

TO JUDGE OF THEIR MERIT,

THESE SHEETS ARE DEDICATED

IN TOKEN OF

ESTEEM AND GRATITUDE,

BY HIS

LORDSHIP'S

SINCERE FRIEND AND DEVOTED SERVANT,

JOSEPH TOWNSEND.

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DIRECTIONS

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DIRECTIONS

TO THE

ITINERANT IN SPAIN.

TO travel commodiouſly in Spain, a man ſhould have a good conſtitution, two good ſervants, letters of credit for the principal cities, and a proper introduction to the beſt families, both of the native inhabitants and of ſtrangers ſettled in the country.

The language will be eaſily acquired.

His ſervants ſhould be a Spaniard and a Swiſs, of which one ſhould be ſufficiently acquainted with the art of cooking, and with the ſuperior art of providing for the journey; which implies a perfect knowledge of the country through which he is to paſs, that he may ſecure a ſtock of wine, bread, and meat, in places where theſe excel, and

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ſuch a ſtock as may be ſufficient to carry him through the diſtricts, in which theſe are not to be obtained. For himſelf, his ſervants, and his baggage, he ſhould purchaſe three ſtrong mules, able to ſupport the load which is to be put upon them. In his baggage he ſhould have ſheets, a mattreſs, a blanket and a quilt, a table-cloth, knives, forks, and ſpoons, with a copper veſſel ſufficiently capacious to boil his meat. This ſhould be furniſhed with a cover and a lock. Each of the ſervants ſhould have a gun ſlung by the ſide of his mule.

To travel as an œconomiſt in Spain, a man muſt be contented to take his chance for conveyance, and either go by the poſt, wherever it is eſtabliſhed; or join with officers, going to their various ſtations; to hire a coach, or quietly reſign himſelf to a calaſh, a calaſine, a horſe, a mule, or a *Borrico*. Theſe laſt are the moſt convenient for the purpoſe of croſſing the country, or of wandering among the mountains. If he is to traverſe any diſtrict infeſted by banditti, it will be ſafe for him to go by the common carriers, in which caſe he will be mounted on a good mule,

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and take the place, which would have been occupied by ſome bale of goods. Any one, who is fond of botany, for ſhort excurſions, will make choice of a *Borrico*. Theſe are always to be had, when, as in ſome villages, neither horſe nor mule are to be obtained. I have uſed this honourable appellation for the moſt patient of all animals, becauſe I would not ſhock the delicacy of a young traveller, by telling him, at his firſt ſetting out, that he may ſometimes find himſelf under the neceſſity of riding upon an aſs. He muſt, however, know, for his conſolation, that an aſs does not appear ſo contemptible in Spain as in the colder regions of the north.

The beſt time for him to begin this expedition is in autumn, when he may go by Bayonne, Burgos, Valladolid, and Segovia, haſtening to the court at St. Ildefonſo. Here he is to procure letters for the chief cities in Spain. On theſe will depend the whole pleaſure of his excurſion. During the winter he may ſee all the ſouth of Spain, Toledo, Cordova, Seville, Cadiz, Gibraltar, Malaga, Granada, Carthagena,

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Murcia, Alicant, Valencia, and Barcelona. Returning by Zaragoza to Aranjuez in the ſpring, he may follow the Merino flock to the mountains of the north, whilſt the country, on which he has turned his back, is rendered unfit for travelling, by the diſſolving heats, by want of proviſions, and by malignant fevers. This ſeaſon will be beſt employed in Gallicia, the Aſturias, and the provinces of Biſcay, taking Salamanca and Leon in the way.

Had I received ſuch directions previous to my Spaniſh journey, I ſhould have eſcaped a ſevere fit of illneſs, which was occaſioned by the intenſity of the ſummer's heat. In England, intermittents are commonly aſcribed to marſh miaſma, but in Spain their origin is attributed to the ſtroke of the mid-day ſun; and I am inclined to think this may often be the genuine cauſe.

JOURNEY

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JOURNEY

FROM

LONDON TO PARIS.

I SET out from London January 30th, 1786, and croſſing the channel in the night, landed the next day at Calais, from whence, proceeding in the diligence, I arrived early on the 3d of February at the hotel de Meſſageries at Paris. From Calais to the vicinity of Paris is hilly all the way. The diſtance is one hundred and ſeventy-ſeven miles. The country is open, moſtly in tillage, and not well wooded; the ſoil is chiefly ſand. Calais itſelf is in a plain, which is covered with pebbles. In the vicinity of Calais, the ſand is light and apt to drive, but as you advance it becomes more firm, yet with hard rain it binds, and muſt be therefore uncertain in its produce. As you leave Boulogne, the ſoil improves in

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ſtiffneſs, till about Amiens, and nearer Paris, it becomes ſtrong clay with little ſand.

All the way through Picardy the rock is chalk, hard enough for building. As you advance into the Iſle of France, this chalk meets with the vitriolic acid, and becomes a ſolid gypſum. Of this they burn great quantities; now for their own conſumption, but formerly for exportation. Paris has had the honour of giving its name to this uſeful kind of cement, as being the place from which we originally imported it.

The courſe of huſbandry, through Picardy, is for the firſt year, wheat; the ſecond, barley, or oats, followed by a fallow. They manure with chalk, with dung from the farm-yard, and with the fold. During the ſix months of ſummer they pen their ſheep with hurdles on the fallows; but during the ſix winter months the flocks are confined all night, both for ſhelter and for ſafety, in cloſe pens, where they make a quantity of good manure. The ſheep are ſmall. The ſhepherd goes before them. Together they make a beautiful appearance. The produce of

Picardy,

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Picardy, in wool, is ſix hundred thouſand pounds weight.

Their ploughs are excellent; in form ſimilar to the Norfolk and Rotheram combined; with little iron except the coulter and the ſhare. They have no chain nor drail, but only a wooden bar to ſerve the purpoſe of the latter, with a wooden collar to bring down the beam. The wheels are high, the beam is ſhort, and the whole is both compact and light. They uſe two horſes in the ſand, three in the clay, and manage well without a driver. The harrows are triangular, and have wooden teeth, which is a ſufficient index of the lightneſs of their ſoil. The ſhovel which they uſe, is like the Corniſh. For want of ſtreams their corn is ground by wind-mills. At Calais you have near twenty in full view, and near Paris you may ſee thirty-ſix between the city and S. Denis. In Picardy there are many extenſive meadows, which might be watered, but they do not appear to have adopted this improvement.

Abbeville and Amiens are manufacturing towns. In the former is made good

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damaſk, and the latter is famous for its woollen goods and camelots.

The cathedral church at Amiens is highly worthy of attention. The front of this edifice is ſingular. The foundation was laid in 1220, and the whole was finiſhed in 1288. The length is four hundred and fifteen Pariſian feet, the breadth of the croſs is one hundred and eighty-two, the height four hundred and two.

Montreuil is pleaſantly ſituated on a hill, and almoſt ſurrounded by an extenſive meadow. It is a diſmal town, as are moſt of the villages in Picardy. The houſes are low; the ſhops are ſmall, dirty, and ill furniſhed, which is a certain mark of prevailing poverty.

Soon after my arrival at Paris, I breakfaſted with the Abbé Morellet. His library, conſiſting of eight thouſand volumes, all well choſen, is a model of philoſophical arrangement, founded on the three leading faculties of the human mind; the judgment, the memory, and the imagination. His reading deſk is of a ſingular conſtruction, but the moſt commodious of any I have met with. He ſits in a large eaſy chair,

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chair, the arms of which are ſtreight, to ſupport a light deſk faſtened on a board of about three feet in length. The deſk has two flaps, the one upon the other, of which the uppermoſt will ſerve for writing, or, being lifted up and ſuffered to fall back ſufficiently to make an angle of 45° with the horizon, ſerves at once to form a ſkreen, when he ſits before the fire, and to ſupport any book, from which he wiſhes to take an extract. On his right hand he has a light table on caſtors, to receive this little deſk, when he wiſhes to quit the chair; and on his left is a large deſk for ſuch books or papers as it may be needful to conſult.

In the evening he preſented me with a ticket of admiſſion for three months, to a moſt agreeable ſociety, conſiſting of four hundred members, which aſſembles in the *Sallon des Arts*, at the Palais Royal. They have a large hall for converſation; a commodious chamber for reading, well provided with public prints and modern publications; and a third room for muſic, with a gallery for cheſs. Under this ſuit of apartments is a coffee-houſe, from which

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which any kind of refreſhment can be procured.

The day following he carried me to the French academy, to hear M. de Guibert pronounce an oration in praiſe of his predeceſſor, M. Thomas. The room was crowded with the firſt nobility of France, who attended not merely out of curioſity, but as a compliment to the new academician. I was happy in being preſent on ſuch an occaſion, and was much pleaſed with the diſcourſe, in which not one fine image eſcaped unnoticed by the auditors. It was compoſed of that florid kind of eloquence, which is peculiar to the French, and ſuited to their language. Deſcribing his reluctance to ſucceed ſo diſtinguiſhed a member as M. Thomas, he ſaid, " When " a ſtation has been occupied by uncom- " mon talents, when the public hath been " long accuſtomed to behold the luſtre of " ſuperior merit; the ſucceſſor muſt ex- " pect to meet with no indulgence; the " object of their devotion is no more; the " revered image hath vaniſhed from their " ſight; but the pedeſtal remains, and the " height of this will be a ſtandard, by

" which

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" which to form an eſtimate of him, who " ſhall preſume to place himſelf upon it." A general plaudit interrupted his diſcourſe. When he proceeded to give the character of M. Thomas, he ſaid, " His natural " imperfections ſerved only to make him " cultivate the qualities oppoſite to them; " inſomuch that I never could diſcover " what would have been his failings, but " by the virtues in which he moſt ex- " celled." Here the applauſe re-echoed from every part of the aſſembly.

When a man has once eſtabliſhed his reputation, he is apt to gain more credit than is due to him; and, whatever be his fort, whether wit, pleaſantry, or eloquence, if, by often moving us, he has prepared us to be moved, he may command us at his will; and, keeping our expectation on the wing, he may excite our laughter or applauſe on the moſt trifling occaſion. This, in ſome few inſtances, was the caſe with M. de Guibert, who gained moſt applauſe, when, in my opinion, he deſerved it leaſt. Thus, lamenting the untimely death of his predeceſſor, he began, " When a tree, after " having bloſſomed for a hundred ſprings,

" and

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" and ſcattered its fruit upon the earth for
" as many autumns, ſmitten with barren-
" neſs by time, falls and appears no more;
" it has fulfilled its deſtiny, and in its due
" time ſubmits to the irrevocable law: but
" for a tree in perfect vigour, flowing with
" ſap, yearly puſhing forth new roots, and
" promiſing by its fruits and verdure to be
" the wealth and glory of the ſurrounding
" plains; let this be ſtruck with thunder
" and be ſuddenly deſtroyed; fawns, ſhep-
" herds, ſwains, all run to it, all lament it,
" and the mutilated trunk, now ſacred, is
" for a length of time covered with liba-
" tions, and watered with their tears."
Here their plaudits burſt forth with reite-
rated violence, and for a conſiderable time
interrupted his diſcourſe. The French are
certainly more lively in imagination than
the Engliſh, more fond of painting; but
not ſo much accuſtomed to the coldneſs
of mathematical preciſion. Provided the
imagery be rich and bold, they expreſs
their admiration, without ſtaying to con-
ſider if it be accurately juſt. In all their
aſſemblies they diſcover the quickeſt ſenſi-
bility. Fond of the brilliant, not one fine
ſentiment,

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ſentiment, not one ſtriking image, not one harmonious period, is ever loſt or fails of its effect on them.

The French academy hold their meetings at the Louvre. Three hundred and twenty tickets were delivered out; but I imagine there muſt have been near four hundred in the room.

The days following I employed in viſiting the cabinets of natural hiſtory in Paris.

The royal cabinet is delightfully ſituated at the entrance of the botanical garden. The Count de Buffon being exceedingly infirm, I ſaw this cabinet with Monſieur Daubenton, who ſhewed me every poſſible attention. From the animal kingdom, as I imagine, no collection is equal to this. In this part of natural hiſtory M. de Buffon certainly excelled. The minerals are very numerous, but much inferior to thoſe which are in private cabinets. There are, indeed, large maſſes of gold and ſilver, but I cannot ſay that they appear to me well choſen.

The cryſtallized diamonds are fine, more valuable to the naturaliſt than to the jeweller.

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The aqua marine cryſtals are very large.

The emeralds from Peru are large and clear: ſome are ſingle cryſtals with hexaëdral priſms; others form a group or druſen.

Of tin, there is one large cryſtal from Bohemia; but few good ſpecimens beſides.

The ſpathous iron, with ſilver, from Begori, in Dauphine, is worthy of attention.

The ſpathous lead ore, in fine needles, from the Hartz, is truly elegant.

Of copper, the chief and moſt valuable ſpecimens are the malachites from Siberia; of which ſome ſpecimens are highly poliſhed.

The antimony, in long needles, with heavy ſpar, from Bohemia is ſuperb.

The ſulphur, in large octaëdral cryſtals, is ſaid to be from Catalonia, but, as I apprehend, it is from Conil mine, near Cadiz.

They have here, as in all the other cabinets of Paris, large dodecaëdral garnets, uniformly incruſted with green talc, from the duchy of Stiria. Theſe garnets, when the cruſt is taken off, appear to have been formed in the talc as in its proper matrix.

Among

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Among the foſſils, the moſt ſtriking are,
A nautilus, near three feet diameter.

Elephant's teeth, from Siberia, with an elephant's thigh-bone, from the vicinity of the Ohio, in Canada.

I remember to have ſeen, in Mr. Catcot's cabinet, in Briſtol, part of an elephant and a monkey, both found in the ſtone quarries near Bath, and at the depth of more than fourſcore feet.

The ferns, which are found on the coal mines in Wales, with the corals of St. Vincent's Rock, near Briſtol, are, like the monkies and the elephants, the natural produce of the Eaſt Indies, or of the torrid zone.

Various are the ſolutions of this phænomenon, given to the world by Catcot, Buffon, De Luc, Whitehurſt, Hutton, and Sauſſure; beſide many others, prior to theſe, not worthy to be named; but none of theſe are perfectly agreeable to truth, and to the appearances in nature, although every one of them ſtates ſome valuable facts, more eſpecially De Luc, who leaves all the others far behind him.

If

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If ever a conſiſtent hiſtory of the earth and of its mutations ſees the light, we ſhall probably be indebted for it to a gentleman, who has been, with peculiar advantages, ſtudying the ſubject more than thirty years, and from whom, indeed, have been derived moſt of the uſeful hints, on which our beſt modern authors have built their ſyſtems. His account of ancient caſtles has been juſtly admired by all men of learning; but, ſhould he live to indulge the world with the true hiſtory of the earth, and of the changes which it has undergone, this will eclipſe all his other works, and convince the moſt incredulous, at leaſt as far as he enters on the ſubject, that nature and revelation perfectly agree.

After having viſited the king's cabinet, I went round to the other principal cabinets in Paris:

M. d' Orcy, a farmer general, in the Place Vendome, has two apartments, one for reptiles, the other for minerals.

His minerals are numerous, large, and elegant.

Of

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Of gold he has only two fine ſpecimens. Of the other metals the principal are, copper in blue cryſtals, with copper bloſſom and green feathered ore:

Tin cryſtals from Wheal Trevaunance, in Cornwall, and one large cryſtal from Bohemia:

Lead ore, white, green, and white mixed with copper blue, from the Bannat of Temeſwar:

Iron hæmatites in all its forms, a rich variety:

Blend with bright yellow pellucid cryſtals, elegant and rare:

Antimony in long coloured needles, permeating rhomboidal cryſtals of heavy ſpar.

The cabinet of *Monſieur de Romè de l'Iſle*, Rue des Bons Garçons, preſents a moſt intereſting ſyſtem of cryſtallization. With aſtoniſhing patience and acuteneſs, he traces the cryſtals of ſalts, earths, metallic ſubſtances, and gems, through an almoſt infinite variety, in beautiful ſucceſſion, each to its elementary and characteriſtic form, and ſhews clearly by what laws they have departed from it. In the pro-

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ſecution of his ſubject, he has clearly aſcertained a fact of great importance to the natural hiſtorian, which is, that minerals may be infallibly diſtinguiſhed by the form, the hardneſs, and the ſpecific gravity of their cryſtals. Thus, by the ſenſible qualities of the mineral itſelf, if cryſtallized, we may inſtantly reduce it to its proper claſs, and judge of its contents, without the aſſiſtance of the fire. We began with examining his calcareous ſpars, than which none is more varied in its forms. Theſe, even our dog-tooth ſpar of Derbyſhire, he traced back to the rhomboidal parallelopiped, of preciſely the ſame angles with the Iceland cryſtal, or double refracting ſpar; proving them to be only an aggregate of rhombs, regularly contracting from the baſe to the apex.

This inveſtigator of nature's moſt ſecret path has almoſt reduced himſelf to blindneſs by his nocturnal ſtudies.

A friend of his related to me a curious anecdote, which does much honour to his heart. In his youth he received a good education, and in his advancing years found all his wants ſupplied, without ever

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ever being able to diſcover to whom he was indebted, either for this bounty, or for his birth. That he might know the one, he laboured to find out the other. His firſt attempts were checked with a caution to forbear; and for a time he continued quiet, if not contented to remain in ignorance; but in the end, growing weary, and impatient to diſcover a ſecret, which was ſo diligently concealed from him, he gave way to his curioſity. Receiving no farther hints to reſtrain him, he grew more bold in his inquiries, till ſuddenly he found the ſtream cut off, before he had traced it to the fountain from which it flowed. Thus, at once diſappointed and deſerted, he had no reſource but in himſelf. The ſtraitneſs of his circumſtances brought him acquainted with Mr. Foſter, who employed him in making out, from time to time, his catalogues of minerals for ſale at Paris. In this employment he acquired a taſte for natural hiſtory, and an intimate acquaintance with mineralogy.

After ſome years, the marquis de Romè died, and by his will not only acknow-

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ledged him for his ſon, but left him every thing, which was in his power to bequeath.

The widow of the marquis, with her three daughters, caſt themſelves on the generoſity of de Romè de l'Iſle, who told her, " You have been accuſtomed to affluence, " and your daughters have been trained up " to high expectations: I have learned to " live upon a little; I ſhall take only a " ſmall penſion for myſelf; you and your " daughters may enjoy the reſt."

Monſieur Sage, from whom I had the chief of this relation, took an opportunity of repreſenting this act of generoſity to the preſent king, who has made ſome decent addition to his income; and he is now in affluence, loved and reſpected by his friends, and admired by all men of ſcience.

M. de la Bove, Rue des Champs Elizés, who is intendant of Dauphinè, has a collection of minerals ſomewhat ſimilar to that of M. d' Orcy, but choſen with more taſte, and conſiſting of ſmaller ſpecimens. He excels in the productions of his own province, more eſpecially in Schoerl, violet, green, and white, all cryſtallized and

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blended together in the ſame ſtone with aſbeſtos.

M. Aubert, coachmaker to the king, in the Fauxbourgh S. Denis, has a collection of minerals more beautiful, and in higher preſervation than any of the former; for which, if I miſtake not, he has been much indebted to Mr. Foſter of Covent Garden, London, through whoſe hands have paſſed a great proportion of the fineſt ſpecimens of minerals in Europe.

M. de Joubert, treaſurer of Languedoc, Place Vendome, has a well digeſted cabinet of minerals and foſſils, arranged by M. Sage. The ſpecimens are good, many elegant; but their peculiar reference is to the ſciences.

The *Duke de la Rochefoucault* has two ſpacious apartments, beſide two little chambers, filled with minerals, arranged, not according to their genera and ſpecies, but according to the countries from which they came. Of theſe, multitudes are duplicates; ſome good, ſome bad, ſome whole, ſome miſerably broken, but all covered with duſt. The moſt diſtinguiſhed ſpecimens are a large maſs of ſulphur with

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octaëdral cryſtals from Conil, in Spain; a beautiful ſpecimen of Malachites, of a conſiderable ſize, and highly poliſhed; with antimony in large cryſtals. But that which is ſingular to this collection is, a clear rock cryſtal, with a beautiful ſprig of Quartz, white like enamel, ſhooting in the midſt of it.

The duke has few varieties of tin or copper.

His calcedony and agate, from Auvergne, are moſt intereſting, as being the productions of volcanos, long ſince extinguiſhed in that province.

The *Abbé Hauy*, of the royal academy, has a collection of cryſtals which is worthy of attention. He demonſtrates that all cryſtals, of whatever ſize or form, are compoſed of primitive, minute, and elementary cryſtals, and that moſt of them, by proper fractures, may be reduced from the complex to the ſimple and elementary form. In the courſe of my viſit, I ſaw him with a blunt knife reduce a miſhapen maſs of fluor to an octaëdral cryſtal, nor would it readily aſſume any other form. This diſcovery he made by accident; for, obſerving that the angle

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angle of a fractured hexagonal priſm of calcarious ſpar was the ſame as of the rhomboidal, he was led to try the other parts of the cryſtal. By theſe means he found that the whole was in lamellæ of perfect rhombs, breaking eaſily and only on their proper ſurfaces, and yielding rhomboidal cryſtals. He is now purſuing this diſcovery on the other cryſtallized ſubſtances, obtaining the primitive or elementary form ſometimes by heating and quenching them in water, at other times by breaking the rude maſs, or compound cryſtal, with a hammer, varying his operations according to the nature of the ſubſtance. He is deeply verſed in the mathematics, of which he has availed himſelf in this reſearch. The ſimplicity of his manners is moſt engaging. This diſcovery beautifully illuſtrates the ingenious obſervations of de Romè de l'Iſle on the elementary and compound forms of cryſtals, and throws much light on this branch of natural hiſtory.

M. Haſſenfratz, engineer of the royal mines, and profeſſor in the newly inſtituted academy of mining, has a few well choſen minerals, which are chiefly valuable, as be-

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ing of his own collecting in the way of his profeſſion. It is difficult to ſay whether he moſt excels in chemiſtry or mineralogy; for he is eminent in both.

He carried me, in our walks, to ſee a M. Stoutz, a German, diſtinguiſhed for his ſuperior knowledge in minerals and mining, who was employed on the part of the French government to viſit the mines of Hungary, Bohemia, Saxony, and other parts of Germany. I found him perfectly acquainted with the nature of all mountains in which mines are formed. His collection is made upon a peculiar plan: every ſpecimen of mineral ſubſtances in his cabinet, is connected with others from the ſame mine, forming a little collection by itſelf; and conſiſting of the metal in its ore, with all the intermediate ſtrata or changes in the rock, from the ſurface downwards, each with references to the various depths from which they came, and obſervations on the mountains in which the mineral is found. Since I left Paris, I hear that count d'Aranda has ſent him into Spain, to which country, with his ſuperior talents, he will be a valuable acquiſition.

M. Beſſon,

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M. Beſſon, Rue S. Honorè, has the moſt elegant and moſt ſyſtematical collection of minerals I ever ſaw, beautiful as Mr. Foſter's, and claſſed nearly upon the ſame plan with the honorable M. Charles Greville's. In his collection of flints, you have the whole hiſtory of flint, from its moſt rude appearance to what, for beauty, we ſhould call its moſt perfect ſpecies; with all the varieties, in the moſt natural and methodical arrangement. The ſame outline he purſues in all mineral and metallic ſubſtances, tracing them through all their appearances and forms, from thoſe that are elementary to thoſe which are moſt compounded, and ſhewing the mineral, not merely in all its matrices, but in all its combinations. In no cabinet did I ever ſee beauty and ſcience ſo happily united. Part of this wonderful collection is not yet arranged for want of room, but chiefly for want of money to purchaſe cabinets. It is much to be lamented that a man of his abilities, who has diſcovered ſuch zeal, ſuch indefatigable induſtry, in traverſing the mountains, viſiting the chief mines of Europe, and exploring their contents, ſhould be diſtreſſed

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treſſed and ſtraitened in his purſuit of ſcience. But more is it to be admired, that a man of his extenſive knowledge ſhould be hid, and among all the monarchs of Europe, among all the great, among all the patrons of ſcience, ſhould find no protector.

M. Sage is director of the mint, and principal of the royal academy for miners.

When a man of ſcience enters the ſpacious hall in which the minerals are kept, if he be not altogether deſtitute of taſte, he will be at a loſs which to admire moſt, the building itſelf, or its contents. The elegant ſimplicity of the painted dome, the ſurrounding gallery with its pillars and pilaſters, the whole covered with Italian ſtucco, the harmony and juſt proportion which every where prevail, and the diſpoſition of the minerals, excite the moſt pleaſing ſenſations of delight. In this beautiful apartment, with much ſimplicity and taſte, a receſs is formed for the laboratory, where M. Sage exhibits his experiments when he is delivering his lectures to his pupils. In the centre of the hall, an area

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area is incloſed for them by a ſkreen, which forms his cabinet for the reception of his minerals. In his collection, his principal attention has been to ſcience; and for that reaſon he has choſen ſpecimens beſt ſuited to exhibit the metal, the matrix, its various combinations, and the acids by which it is mineralized, whether the ſulphureous, the arſenical, or the phoſphoric. Beſides this claſſical collection, he has a provincial one in the gallery, where he has arranged the minerals according to the country from which they come. His method is both pleaſing and improving. To complete the whole, he has depoſited in a cabinet by themſelves the produce of all the various minerals in his collection, the reſult of his moſt accurate aſſays.

This ineſtimable treaſure is deſigned for the uſe of ſtudents in the newly eſtabliſhed academy for miners; an academy which, without diſtinction of nation or religious creed, is open to all the world. In this inſtitution, as in all other eſtabliſhments for extending the bounds of ſcience, and diffuſing knowledge freely and without expence among all ranks of people, we muſt admire

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admire the liberality of ſentiment, the high ſpirit, and ſenſe of dignity, which has diſtinguiſhed the ſovereigns of France.

M. Sage is the principal and father of this royal academy, and at the ſame time the chemical profeſſor. Beſides himſelf, there are four principal profeſſors, whoſe ſtipend is two thouſand four hundred livres each (or one hundred pounds ſterling) per annum. There are five inſpectors, each at three thouſand livres penſion, fifteen hundred for travelling expences, and three hundred by way of gratuity, if their diligence deſerves it; ſix engineers, at ſix hundred livres penſion, four hundred for journies, and two hundred gratuitous; twelve ſcholars, at ſix hundred livres penſion, and two hundred for gratuity. Of theſe, two are conſtantly travelling in Germany, with three thouſand ſix hundred livres each for their expences.

There are beſides, twenty ſupernumeraries, or expectants, without any penſion.

The inſpectors and the engineers viſit all the mines of France, and make a report to government, not merely of the produce, but of the management, together with ſuch

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ſuch obſervations as they may think needful to communicate. They are likewiſe to be ſent occaſionally into foreign countries, to examine the improvements which are made in ſearching for and working mines. From this academy the mines of France will be ſupplied with ſkilful engineers and managers. All the members have a blue uniform with M. R. on their buttons.

I was much ſurpriſed to ſee in moſt of the cabinets, and in all the printed catalogues at Paris, a ſubſtance which perhaps does not exiſt in nature; it is native tin. What they produce for ſuch, appears dull and brittle, and is in fact nothing but tin returning to a calx. Whilſt we ſmile at their credulity, we muſt lament that men of ſcience ſhould have been ſo eaſily deceived themſelves, and, without intending to propagate a falſehood, ſhould have deceived all thoſe, who have any dependance on their knowledge and veracity. For me it was by no means difficult to detect the miſtake; becauſe every ſpecimen of this ſuppoſed native tin came from my own cabinet, and went out from thence under the deno-

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denomination of dephlogiſticated tin. Of this, large fragments, and even blocks, have been found in the moors near St. Auſtle, but never at any conſiderable depth, nor far diſtant from ſome old furnace or habitation, of which the tradition is, that they were, in ſome remote period, occupied by Jews. In the ſame places copper implements have been likewiſe found returning to a calx, ſome friable and red, others ſaturated with the baſis of vital air, and therefore covered with malachites. This tranſmutation throws light on the red copper ore, with its octaëdral cryſtals found among the branchings of native copper in deep mines. The circumſtances are different, but the operation of nature is the ſame in both.

Having viewed all the cabinets of natural hiſtory in Paris, I determined next to ſurvey its environs.

The moſt ſtriking feature in this vicinity is Montmartre, a mountain of Gypſum, at the head of the ſtreet Montmartre. The ſtrata are horizontal. Sixteen of theſe have been laid open to the depth of more than one hundred and forty feet,

and

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and are ſeen in the following order. The ſoil is ſandy, covering chalk rubble, in which is flint. Under theſe, clay; foſſil ſhells; cryſtals of ſelenite; gypſum rock; calcarious earth; clay; gypſum rock; clay; gypſum rock; clay; gypſum rock; marly clay; lenticular cryſtals of ſelenite moſtly in pairs, united face to face, of which the ſpears are only fragments; fuller's earth, perfectly free from impurities, in a ſtratum of about eighteen inches; gypſum rock, ſeparated into laminæ by ſtrata of ſelenitical cryſtals, and charged with foſſil bones. The quarries and excavations are immenſe, to ſupply the numerous kilns conſtantly at work. The gypſum rock conſiſts of ſelenite and chalk, which, being burnt, the former loſing its water of cryſtallization, and the latter its fixed air or cretaceous acid, becomes plaiſter of Paris: when this is made into mortar, the ſelenite ſeizes the water, and cryſtallizing, becomes inſtantly hard.

At Belmont, which is diſtant about half a mile from hence, the ſame ſtrata have been diſcovered.

Before I left London, I had purchaſed lenticular cryſtals of quartz; and as this

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form is peculiar to the calcarious genus, I was desirous of seeing the spot from whence they came. With this view I visited the lime-stone quarries in the vicinity of Passy, where I gained the most perfect satisfaction, and saw clearly that the quartz had occupied the spaces left empty by decomposed selenite, which, as I have before observed, is calcarious earth saturated with the vitriolic acid. The lime-stone rock is here charged with turbinæ and bivalve shells. The strata appear to be horizontal. From these quarries they get building stone for Paris. Many of these extend more than one hundred yards under ground, with a roof supported by large pillars. Nearer to the city they sink pits about eighty feet, then drive and raise the stones by engines.

There is not the least appearance of primitive mountains in the vicinity of Paris. All has been transported, and all seems to be horizontal.

Near Fontainbleau, they find a grit-stone, or composition of sand, with a calcarious cement. In the crystal the calx prevails, and takes the rhomboidal form, although

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although the ſilicious matter appears both to the eye and to the touch to be predominant in quantity.

From the abundance of ſelenite in the immediate neighbourhood of Paris, the water of their wells is unfit for uſe.

Having heard much of Pont de Neuilly, I wiſhed to ſee it. Taking advantage, therefore, of the open weather, with a bright ſun, in the month of February, I took my morning walk that way, through the garden of the Thuilleries, and the Elyſian Fields. From thence, there is a wide avenue of trees, with a good pavement in the middle all the way for near four miles.

This part of the country is flat, ſkirted by diſtant hills. The ſoil is a hungry ſand, all arable; but too poor and too light for wheat, and all open *common-field*, divided, as in England, and all over Europe, excepting Ireland, in ſmall ſcattered lots.

This kind of tenure, with this minute diviſion, mark the ſlow progreſs of the plough at more ancient periods; when, from time to time, as increaſing population

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urged them, they ſevered a new portion from the common paſture, and divided it, as far as related to the tillage, among the numerous tenants of each manor. In England, the rapid progreſs of agriculture, in modern times, is ſtrongly indicated by the ſtraightneſs of the hedges, becauſe all ancient bounds are crooked.

Between Paris and the Pont de Neuilly, their crops are barley, oats, and rye, for which they plough with two horſes, guided with check reins, without a boy.

Within two miles of Paris, on the left hand, is the wood of Boulogne, from which the country is ſo plentifully ſtocked with game, that between that wood and Paris, in the compaſs of two hundred acres, I ſaw more than fifty brace of hares, and at leaſt one hundred brace of partridges: a wonderful phænomenon ſo near to the metropolis, ariſing, not merely from the conſtitution of their government, but from the ſtrict execution of their laws. In this we are to look for the ſecurity of perſon and of property in France; where at the ſame time few are puniſhed, becauſe few venture to tranſgreſs.

The

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The Bridge of Neuilly is perfectly horizontal, and remarkable for its elegant ſimplicity.

On my return, I viſited the Hotel Dieu, where the ſick are in number two thouſand five hundred and ſeventy-four, beſides five hundred and ſeventy-one officers or attendants. In all, they make three thouſand one hundred forty-five perſons to be lodged and fed. I obſerved four in a bed, but they have had ſix or ſeven, and among theſe the dying with the dead. The ſick, although ſo miſerably provided for, coſt the public thirty ſols, that is, fifteen pence each per day. They have one ward in the winter, containing about four hundred perſons, ſet apart for thoſe who pretend diſeaſe. The practice of ſtowing ſo many miſerable creatures in one bed is to be aboliſhed, and ſurely upon the beſt of principles, for no man, who reaſons for a moment, can heſitate to ſay which is preferable, to make a few happy, or to render many completely wretched. But the misfortune is, that benevolence is often blind.

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This change in the ſyſtem of the Hotel Dieu has been promoted, if not ſuggeſted, by M. Necker, who, in the hoſpital of S. Sulpice, has ſet an example worthy to be followed, as reflecting the higheſt honour both on the underſtanding and humanity of that moſt accompliſhed woman. She has provided each patient with a ſeparate bed, with the beſt attendance, and with every thing, which can adminiſter to his comfort. Yet all this, by a due attention to œconomy, ſhe does for ſeventeen ſols and ſix deniers each per day, being little more than half what they coſt at the Hotel Dieu.

The next day in the morning I viſited the hoſpital called La Salpetriére, in which are maintained more than ſeven thouſand foundling girls, with a few aged paupers, and about nine hundred proſtitutes. This number is conſiderable, but theſe are only ſuch as were guilty of other miſdemeanors. On the liſt of the police are more than twenty-eight thouſand of thoſe abandoned and miſerable women, who, in the duſk of the evening, ſwarm in

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in every ſtreet. In this hoſpital they have eight hundred children employed in needle-work and ſpinning, of which number many excel in moſt beautiful embroidery. When one of the old women dies, her huſband leaves the hoſpital. The government is by a matron, fourteen prieſts, thirty-two ſiſters of a ſuperior order, with fifty more, who are ſubordinate to theſe.

February the 20th, I was preſent at a ſolemn ſervice, celebrated in the church of S. Euſtache, for the repoſe of the ſoul of the Duke of Orleans. The whole was conducted with the greateſt magnificence and taſte. The ſtreet leading to the church was lined with ſoldiers, horſe and foot, ſtationed at convenient diſtances, beſides ſome who were patroling. The front of the church was covered, and all the choir was lined with black. At the bottom of the choir was a coffin raiſed upon a catafalque, or bier, which was about thirty feet high, twenty-four feet long, and eighteen wide, all covered either with mantles and eſcutcheons, or with hiſtorical pictures, and forming a well-proportioned pyramid. On the pedeſtal, at the four corners, were

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four urns, ſupported by columns, and filled with ſpirits, from which proceeded a blue and lambent flame, the kind of light beſt ſuited to the melancholy ſcene. This lofty catafalque had over it a canopy, which hung from the roof, about forty feet above the coffin. Over the altar was a ſilver crucifix, large as life, covered likewiſe with a rich canopy, adorned with plumes, and lighted by twenty-four large wax tapers in golden candleſticks. Guards were ſtationed round the ſuppoſed body to keep off the multitude; I ſay the ſuppoſed body, for his body had been previouſly interred with the ſame pomp and ceremony at Vale de Grace, and his heart had been depoſited in the country. The chief mourners upon this occaſion were the Duke of Orleans, his ſon, and the Duke of Bourbon, attended by all their neareſt relations and their friends. The funeral oration was pronounced by the Abbé Fauchet, who, like all the good French writers, with their peculiar kind of eloquence, roſe ſometimes to the true ſublime.

To the Duke of Orleans belongs the Palais royal, which is now the favourite even-

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ing walk, being equally ſheltered from the ſun in ſummer, and from the rain in winter. The dimenſions of this quadrangle are nine hundred feet by three hundred and ſixty; and the walk is twelve feet wide, ſurrounded by coffee-houſes, traiteurs, and ſhops of every kind. The ſquare is planted, well gravelled, and well lighted in the evenings.

The pictures of this palace and of Verſailles, with thoſe which abound in many of the convents, have been ſo well deſcribed, that I ſhall obſerve the ſtricteſt ſilence on that ſubject, always remembering, that I am haſtening into Spain, and taking France only by the way. Such things, however, as others have not noticed, and are yet worthy of attention, I would ſlightly touch upon, that I may not leave too great a chaſm between Calais and Belgarde.

In the evening of February 28, being the laſt day of the carnival, when Catholics bid adieu to feſtivity and mirth for forty days, all Paris was in motion, and ſome thouſands were in maſks, men in the dreſs of women, and women in the dreſs

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of men; all aſſuming characters, and many ſuſtaining thoſe characters with ſpirit. Popes, cardinals, monks, devils, courtiers, harlequins, and lawyers, all mingled in one promiſcuous crowd. In the ſtreet of S. Honoré alone were aſſembled more than one hundred thouſand ſouls. This ſtreet is two miles in length. With ſuch a multitude, although more than four hundred coaches were conſtantly parading on one ſide the ſtreet, and as many on the other, in oppoſite directions, ſuch were the precautions, that no accident either happened or could happen. To preſerve the moſt perfect order, foot ſoldiers were ſtationed at the mouth of every ſtreet where carriages could paſs; and in the middle of the ſtreets, horſe-guards and infantry were conſtantly patroling to keep coaches in their proper line. For this purpoſe they employed one hundred horſe, and twelve hundred of the foot guards.

I ſaw one elegant coach quietly taken into cuſtody for ſome indiſcretion of the coachman.

At the time of the king's marriage, they had neglected theſe precautions, and ſeveral hundreds

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hundreds loſt their lives, either trampled under foot, or cruſhed to death.

Before I left Paris, I obtained a ticket of admiſſion to the Licée, near the Palais royal, where a numerous ſociety of gentlemen and ladies of the firſt faſhion meet to hear lectures on the ſciences, delivered by men of the higheſt rank in their profeſſion. The ſciences they cultivate are the mathematics, chemiſtry, natural hiſtory, experimental philoſophy, anatomy, civil hiſtory, polite literature, and all the languages of Europe. Their apparatus is magnificent, and all their mathematical inſtruments, the beſt which can be procured. They have a very elegant ſuit of apartments, one for reading and writing, another for converſation, and a third for the lectures. The ſubſcription is only four Louis per annum. I was much ſtruck with the fluency and elegance of language, with which the anatomical profeſſor ſpoke, and not a little ſo with the deep attention of his auditors. The French, with all their volatility, can be grave when it is proper to be ſo.

After this pleaſing entertainment, I called

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ed to take leave of M. Haſſenfratz, whom I found verifying an experiment which has been made in France, and which may be of the higheſt import to the bleachers of linen. This proceſs they accompliſh in twelve hours; and at the expence of one penny Engliſh they can bleach ſix ells of linen. For this purpoſe they begin with dephlogiſticating a quantity of marine acid, by means of manganeſe, after which, having previouſly diluted it with water, they ſaturate the acid with an alkali, and thereby leave the dephlogiſticated air at liberty to act on all colouring ingredients which are found in the materials to be bleached. In the ſame manner the green wax from America may be rendered white and fit for uſe. The ſame ſolution will likewiſe ſerve for a teſt, by which to try the durability of colours in cloth, becauſe when they fade, it is only by the action of dephlogiſticated air diffuſed in the atmoſphere. This operation explains the effect of manganeſe in making glaſs pellucid.

Previous to my leaving Paris, I inquired the price of proviſions in the market, which I found to be as follows:

Chickens

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Chickens and ducks, fifty-five ſols each.

A ſmall turkey, five livres.

Butcher's meat, ten ſols per pound all the year.

Pork and veal, at this time ſixteen ſols per pound.

Butter, thirty-ſix ſols.

Wine in the city, twelve ſols, and out of the city, eight ſols per bottle.

It is the policy of the French government to make all theſe articles dear in Paris.

JOURNEY

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JOURNEY

FROM

PARIS TO BELGARDE.

HAVING accompliſhed the purpoſe for which I came to Paris, in obtaining letters of recommendation to Madrid, and the weather proving more favourable for travelling than it had been in the beginning of the month; on the fourteenth of March I ſet out with an agreeable party in the diligence for Lyons. To thoſe who can riſe at two in the morning, and have an appetite for dinner before nine, this mode of travelling is not unpleaſant.

The firſt day we dined at Melun, and lay at Villeneuve la Guiarre. The next day, paſſing through Sens, where the Dauphin's monument

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monument is much admired, we dined at Villeneuve le Roi, and lay at Auxerre. To this city there goes a large paſſage-boat from Paris, which, aſcending the rivers Seine and Yonne, performs its voyage in three days, including the intermediate nights, during which it is unremittingly, yet ſlowly, moving on. This boat is much uſed in ſummer, and, during the day, is very pleaſant, paſſing through the richeſt and moſt beautifully varied country. The paſſengers carry their own beds, and ſpread them in a ſpacious cabin.

All the way from Paris to Auxerre the prevailing ſoil is ſand, being a continuation of that vaſt tract of ſandy country which ſtretches from Dieppe by Rouen and Orleans to Bourges, yet under the ſand on the hills, chalk appears. The fields are open, and the country abounds with corn and wine.

Auxerre is a rich city, conveniently ſituated for trade. The cathedral is a fine old ſtructure, and worthy of attention. It is much to be lamented, that the chapter has never yet eſtabliſhed an accumulating fund, to perfect what has been left unfiniſhed

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niſhed of this noble edifice, and to complete the tower, which daily reproaches them for their want of zeal.

Having paſſed Auxerre, we loſe ſight of the chalk, and in its place we find either a calcareous freeſtone, or a limeſtone rock, apparently in horizontal ſtrata; but both the limeſtone and the chalk abound with marine productions. The face of the country, as far as relates to ſoil, rock, culture, and produce, bears a ſtrong reſemblance to that between Bath and Atford, with this peculiarity, that all the hills are here upon one level, being evidently poſtdiluvian, formed by torrents, and interſected by deep ravins. Nature here hath not perfected her work. Neither hills nor vallies have yet aſſumed their proper form and character; all is confuſion, ruin, devaſtation. But when the heavy rains and torrents ſhall have ſunk the ravins, widened the vallies, and, wearing away the angles from the craggy mountains, ſhall have reduced them to gentle declivities, or to eaſy ſwells, the rains will ceaſe to be deſtructive, the raging torrents will become gentle ſtreams, and the ſurface of theſe hills, clothed with

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with verdure, will be protected from future devaſtation.

When we came to Vermanton, we began to find blocks of granite, brought down by the torrents from the mountains; and, arriving at Rouvray, we ſaw the granite rock itſelf. From this circumſtance, without having recourſe to the barometer, we have reaſon to conclude that we have aſcended to the higheſt level in this part of France; and, upon examination, we ſhall find in this vicinity the ſources of many rivers, which running to the eaſt, to the north, to the weſt, and to the ſouth, empty themſelves into the Seine, the Loire, and the Saone.

Not that we are to conclude from hence, that granite is the upper ſtratum of the earth, covering the limeſtone and the chalk, becauſe the reverſe of this we find to be the fact; but where chains of rugged granite mountains are ſeen, experience teaches us to look for nothing higher. Thus we ſhall find it on the moſt lofty ſummits of the Alps.

About Rouvray the ſoil is decompoſed granite, of which the quartz and ſilicious

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ſand remain upon the hills, whilſt the clay and mica are waſhed into the vallies.

All here is arable incloſed. They uſe five horſes in their ploughs.

The cathedral of Autun ſhews great antiquity. In aſcending the marble ſteps which lead to it, I was ſtruck with the number of gryphites in this blue marble without the leaſt veſtige of any other ſhell.

As we had been deſcending a conſiderable time by the ſide of the Arroux, a little river which flows into the Loire, and were come to a much lower level, I was not ſurpriſed to meet with marble.

When we came within five leagues of Challon, and began to fall down towards the Saone, loſing ſight of the granite, we found only limeſtone, charged with gryphites, and covered with ſand, which appeared to have been waſhed from a ſuperior level.

Challon carries on much trade in corn and wine. The waters being out, we could not go down the Saone, as was intended. I was not ſorry for this, becauſe, although the country bordering on the river, as you approach Lyons, is moſt enchanting, I had ſeen

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ſeen it, and retained a lively impreſſion of its beauty.

Between Challon and Macon is rich, and moſtly flat, but before we came to Lyons, we met with hills and granite, and indeed where the Saone enters the city it has made a paſſage for itſelf through the granite rock, which it has fretted away to the depth of about one hundred feet, leaving it on one ſide perpendicular like a wall.

All through Burgundy they uſe oxen on the road, yoked by the horns, which is certainly the beſt way of working them. The reaſon will be obvious, if we conſider that by this mode of proceeding there is no ſtrain upon any of the ſmaller muſcles of the neck. Though the preſſure be great, the vertebræ are only in the ſame proportion locked cloſe into each other, preciſely in the ſame manner as are the bones of the leg and thigh of him who uſes Sampſon's girdle. This girdle, as it is known, a man puts round his loins, whilſt he ſits on a bench with his heels againſt any immoveable object; thus ſituated, and keeping his legs directly in the line of draft, he may ſuffer ten, or even twenty men, to pull at

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the girdle without moving him; but a ſtrong man, who was trying this experiment, exulting in his ſtrength, took hold of the rope which was faſtened to the girdle, and thereby elevating the line of draft, and having nothing to depend upon but his muſcular exertion, he was raiſed in a moment, and thrown upon his face. Setting aſide, however, all reaſoning upon this ſubject, the fact ſpeaks for itſelf, and all who have obſerved the loads which two oxen on the continent will draw, muſt give the preference to their manner of yoking them.

The deſcription of Lyons, as to its public edifices, I ſhall leave to others, and ſhall conſider it only with regard to manufacture. Enjoying a delightful climate, and ſituated at the conflux of the Saone and of the Rhone, it muſt very ſoon have riſen to importance. Its inhabitants have in all periods been diſtinguiſhed for induſtry, for arts, and for love of freedom. Under the Romans, as a municipium, it poſſeſſed valuable immunities; and when it became a colony, as ſuch it was cheriſhed and protected. Under the ſove-

reigns

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reigns of France it has enjoyed peculiar privileges, being governed by its own magiſtrates, and guarded by its own militia. Four annual fairs, each of fifteen days, inſtituted in the reign of Lewis XI. have much contributed to the advancement of its traffic.

Its good government naturally attracted citizens, whilſt the troubles excited at various periods in the neighbouring ſtates, more eſpecially about the year 1290, between the contending factions of the Gwelps and Gibelines, occaſioned many from Italy and Florence to ſeek refuge in a city, where they could live in ſecurity and peace.

The principle dependance, and the ſource of wealth to Lyons, is her manufacture of ſilk in all its branches.

The firſt who introduced this into France was Charles IX. but the chief encouragement it received was in the watchful attention of Henry IV. who in the year 1602 made a contract with ſome merchants to deliver four hundred thouſand mulberry-trees, five hundred pounds of ſeed, and the eggs of ſilk-worms to the

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amount of one hundred and twenty and five pounds, with ſix thouſand copies of a work containing all proper directions for managing the plants, the worms, and the ſilk produced by them. Theſe were to be diſtributed in the generalities of Paris, Tours, Orleans, and Lyons, at the rate of a hundred trees, and half an ounce of eggs to every pariſh. The eccleſiaſtics, as well regular as ſecular, aſſiſted in this work, both by their precepts and example. But owing to the civil wars, by which France was diſtracted during two ſucceeding minorities, little was done effectually to animate this profitable commerce, till Lewis XIV. aſſumed the reins of government: from that period its advancement has been rapid.

In the year 1667 there were two thouſand looms at work, but in 1768, more than eleven thouſand; and ſuch is the progreſs of the manufacturers, that the grower of ſilk is not able to keep pace with them; for at the preſent time they are obliged to purchaſe from foreigners more than twenty millions of pounds weight to ſupply the market.

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The ſilk-weavers here have almoſt acquired a monopoly of taſte, and by this circumſtance have given an example to the world of what competition can do, when properly directed.

Taſte is not any where cultivated with ſuch attention as at Lyons. The manufacturers have at times employed more than a hundred pattern-drawers, whoſe invention is unremittingly upon the ſtretch, except when they obtain leave of abſence, which is ſometimes granted even for twelve months, that they may reſt their imagination, and acquire new ideas.

The firſt perſon noticed as having excelled in this profeſſion was *Revel*, the friend and companion of Lebrun, an artiſt whoſe talents were ſo far ſuperior to thoſe of his ſucceſſors, that they regard him as their Raphael. After him came *de la Salle*, equally famous for his birds, his landſcapes, his flowers, and his fruit. *Jean Robin*, anxious that the embroiderers might copy nature, and introduce into their works from her rich variety, planted a garden in the vicinity of Paris for the cultivation of exotic plants; and thus,

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without intention, laid the foundation of the phyſic garden. It was here that the celebrated Pierre Vallet, of Orleans, embroiderer to Henry IV. and Lewis XIII. acquired his fame.

Although *Lyons* has enjoyed ſingular advantages, ſhe has likewiſe had to ſtruggle with difficulties. Theſe are admirably diſplayed by the Abbé Bertholon, in a work of his upon this ſubject, lately given to the public; and as every government in Europe is intereſted in his obſervations, I ſhall briefly ſtate them. The various obſtacles to the proſperity of trade have been and muſt be as long as they exiſt;

1. *War*, whether foreign or domeſtic, civil or religious; from factions in the ſtate, or from the deſire of freedom. Becauſe commerce is frighted at the appearance of the laurel, and flouriſhes only whilſt ſhaded by the peaceful olive.

2. *Perſecution*, and want of toleration; as in the revocation of the edict of Nantz, operating in the ſame manner as the expulſion of the Moors from Spain.

3. *Laws* indiſcreetly interfering, prying, med-

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meddling, reſtraining, vexing the manufacturer or the merchant in his operations.

4. *Taxes*, ſuch as either directly or indirectly check the conſumption. It was not till 1743 that the manufactures of Lyons were exported duty free, and even now all proviſions entering the city pay a heavy tax, particularly wine. The conſequence is, the riſe of labour in the firſt inſtance, and as the weavers on feſtivals reſort with avidity to the neighbouring villages to indulge themſelves with wine, they acquire habits of intoxication.

5. *Feſtivals* multiplied raiſing the value of the remaining days, and leading to every ſpecies of exceſs.

6. *Prejudices* reſpecting *uſury*, tending to keep money out of circulation, and thereby to raiſe the intereſt on it, to the diſadvantage of thoſe who wiſh to borrow. In conſequence of this, money is at 6 per cent. in Lyons.

7. *Luxury* among the manufacturers, conſuming their capitals, and cramping their operations.

8. *Titles of Nobility* and rank granted to merchants, under the abſurd idea of promoting trade, but in truth diverting the

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ſtreams by which commerce ſhould be watered. This miſtaken policy is not uncommon in the preſent day. How much wiſer was the conduct of Louis XI! he was a friend to commerce, and cheriſhed it by the moſt marked attentions, by wiſe regulations, and by admitting to his table thoſe who ſignalized themſelves in its advancement.

A merchant named Maitre Jean, flattered with this diſtinction, ſolicited a patent of nobility; the king granted his requeſt, but from that time never invited him to dinner. Mortified with being thus neglected, when he thought himſelf more worthy of attention, he ventured to expoſtulate, but was ſilenced by this reply: "Allez M. le Gentilhomme. Quand je "vous faiſois aſſeoir a ma table, je vous "regardois comme le premier de vo- "tre condition; aujourdhui que vous en "êtes le dernier, je ferois injure aux au- "tres, ſi je vous faiſois la même fa- "veur."

The learned Abbé, to whoſe work I am indebted for much information, recommends the white *female* mulberry as beſt for ſilk worms, and ſuggeſts an idea, that

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if ſuffered to live on the trees in the open air, yet protected from the rain, they would become more hardy, more free from diſeaſes, and ſpin more perfect ſilk. He mentions a M. *Pernon*, who produces ſilk as white and beautiful as that of Nankin; and recommends for bleaching the Bengal ſilk, to ſoak it repeatedly in a mixture of ſpirit of wine and marine acid, in the proportion of thirty-two to one.

According to his account, no people either work longer or fare harder than the weavers of Lyons; riſing before the ſun, and continuing in their looms till a late hour in the night, to procure a ſcanty pittance for themſelves and for their children. He tells us, that no inſtance has been found of three ſucceſſive generations who have been weavers: the firſt is feeble, the ſecond is diſeaſed, and the third never comes to maturity, unleſs tranſplanted to a ſoil, and engaged in ſome occupation more conducive to health.

Emigrations have been the conſequence of theſe hardſhips; becauſe neither laws nor chains will keep the artificer from wan-

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wandering, when he is a prey to hunger and deſpair. (V. Commerce de Lyon, par M. l'Abbé Bertholon, &c. &c.)

In Lyons, the principal merchants and manufacturers are ſaid to be proteſtants. This obſervation, if well founded, is worthy of attention, and the influence of religious opinions in reſtraining or promoting induſtry and emulation, as a political queſtion, is highly worthy of diſcuſſion; but I ſhall wave this for the preſent.

Having formerly ſeen every thing remarkable in Lyons, and being impatient to be gone, I watched with anxious expectation the riſing and falling of the river. The day after I came to Lyons, towards noon, we began to conceive hopes that the diligence might venture to depart.

The waters ran off with great rapidity, the river ſunk apace, and ſoon found its proper bed; the paſſengers haſtened to the quay, the boat took in its loading, and in leſs than two hours after mid-day we began to float down the ſtream.

This veſſel is very commodious for paſſengers, having a good deck to walk on when

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when the weather is agreeable, and a warm cabin to which the genteeler paſſengers reſort when the atmoſphere is cold or rainy.

Paſſing between the high mountains of Dauphiné, in a winding courſe, and gliding along at the rate of ſix miles an hour, in about five hours we arrived at Condrieux, a little village not far diſtant from Vienne, famous for its wine. M. David, the aubergiſte, did juſtice by us, and credit to himſelf, by the ſpecimens which he produced. He ſells this wine at ſix louis a *piéce*; each piéce containing two hundred and fifty bottles, or one hogſhead nearly. It is a ſweet wine, exceedingly delicate in its flavour.

The next morning, March 21, we paſſed under Hermitage, where M. Larnage, the lord of Teint, annually makes about ſeven hundred hogſheads of the choiceſt wine, which M. Bourgoiſe, a merchant of Teint, in Dauphiné, vends on his account. The ſituation and the ſoil are certainly favourable for making wine, but its peculiar excellence depends on the choice and management

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nagement of the vines, to which M. Larnage pays the moſt minute attention.

As we approach Valence, near which the Iſere falls into the Rhone, this river makes an angle to the right, as if diverted from its courſe, and, being loſt behind the hills, ſhews Valence to great advantage, ſeated on a riſing ground, in a plain of about ſix miles in width.

The mountains are here calcareous. That which is weſt of the river, and oppoſite to Valence, riſes perpendicularly, as if it had been cut aſunder, and does not retain the ſmalleſt veſtige of the half which it has loſt. The ſtrata are horizontal; the ſoil in the plain is ſand, but in many places it is full of pebbles to a conſiderable depth.

All the way as we paſs between the mountains, ſome near to the river, others more remote, we remark, either on their ſummits or their ſides, the ruins of ancient caſtles, each protecting its little village, and many of them carrying marks of the moſt remote antiquity.

This night we took up our quarters at Ancone, and the next morning paſſed by Viviers,

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Viviers, the capital of the Vivarez. This little city is moſt romantic, and, from a proper point of view, would make a pleaſing landſcape.

At noon we paſſed the Pont S. Eſprit, where leaving the marquis de Gras and ſome other officers, in whom I had found agreeable companions all the way from Paris, I began to travel alone.

From Lyons to Avignon, which is one hundred and fifty-two miles, you pay no more than twelve livres, or ten ſhillings ſterling for your conveyance.

The price of proviſions at S. Eſprit is fixed by the magiſtrate. Beef, five ſols; mutton, ſix, excepting in June and September, then ſeven ſols per pound; labour is twenty ſols a day in winter, but in the vintage, diet and ten ſols, or about five pence ſterling.

From Pont S. Eſprit to Montpellier, which is ſeventy miles, I took a return coach, and, without the leaſt difficulty, agreed with the driver for nine livres.

From the Rhone we aſcended for many leagues, and obſerved the limeſtone rock charged, yet ſparingly, with ſmall round gravel

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gravel of white quartz. The country we paſſed through is rich, and the corn-fields are covered with mulberry trees, vines, figs, apricots, and peaches.

As we riſe towards the heights of Valignière, we paſs by Bagnols, a very ancient but wretched town, incloſed with high walls, and defended formerly by towers.

Near the ſummit of theſe mountains, we obſerve the craggy rocks of limeſtone waſted and laid bare by froſt, by winds, by rain, to whoſe rage and violence theſe elevated regions are conſtantly expoſed. Between theſe rocks the road meanders, preſenting at every ſtep the moſt enchanting views of rugged cliffs, interſperſed with the ilex, the juniper, the box, the cyprus, beſides thyme, lavender, and a pleaſing variety of flowers. Amidſt this rich profuſion, I was ſtruck however with the diminutive appearance of the cyprus and the juniper.

We lay at Valignière, a miſerable village anciently defended by a caſtle, the ruins of which remain to remind its inhabitants of their ſuperior happineſs, in no

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longer needing the protection of thoſe walls.

In this country they have no other implements for cultivating their vineyards but ſuch as are uſed in Cornwal, the biddex and the ſhovel, both perhaps of Celtic origin. They have a light ſwing plough, without coulter, fin to the ſhare, or mould board; inſtead of which, they have two little wooden fins faſtened into the heel of the ſhare, one on each ſide, to turn the earth to the right and left, and thus form a rafter. The beam is long, and is faſtened immediately to the yoke. They plough with two oxen, yoked together by the horns, and guided by the ploughman. The ſoil is very light.

From Valignière we conſtantly deſcended to the famous Pont Du Garde, a Roman aqueduct which joins two high mountains. It is about one hundred and fifty feet high, and eight hundred long upon the top, but not more than five hundred at the bottom, near the water's edge. The loweſt tier has ſix arches, the middle has eleven, but the upper one has thirty-five; the whole being of the Tuſcan order, and conſtructed with

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with large ſtones, has the air of greatneſs and of ſimplicity moſt happily combined. It was built for the purpoſe of conveying water into Niſmes. To this edifice, about forty years ago, they added a bridge, much wanted over the Gardon, which is here about ſeventy feet wide.

At Remoulin, not far from the Pont du Garde, the limeſtone rock appears to be entirely compoſed of broken ſhells, united by a calcareous cement, and charged with ſmall round gravel of white quartz, preciſely the ſame as I had noticed in aſcending from Pont S. Eſprit.

March 23, at noon, I arrived at Niſmes, and began immediately to feaſt my eyes with a view of its venerable relics. An accurate account of theſe may be found in a variety of books, as having been deſcribed by travellers of every nation. At the preſent moment, my mind contemplates an object more venerable than theſe monuments of Roman greatneſs, and my attention is wholly occupied with the pleaſing image, the image of a ſhepherd, who lived only for his flock: this was M. de Becdelievre, late biſhop of Niſmes, a prelate equally

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equally diſtinguiſhed for wiſdom, benevolence, and piety. Not contented with relieving from his purſe the diſtreſſes of the indigent, he increaſed the produce of labour in his dioceſe, by transferring to the Sundays many of the numerous holidays which encourage only idleneſs and vice. In the diſtribution of alms, his benevolence was guided by diſc etion. He was a ſtranger to that deſtructive ſpecies of liberality which originates in blind ſenſibility, and has no other foundation but undiſtinguiſhing compaſſion. He conſulted at once his head and heart, neither turning away his eyes from beholding miſery, nor relieving it merely and at all hazards, that he might avoid the painful ſight; but, giving ſuch aſſiſtance in the ſeaſon of diſtreſs, as both reaſon and religion muſt approve; and leaving the poor to feel preciſely that degree of want, which, as long as they retain their freedom, will be always needful to ſtimulate their induſtry. Thus, he reſembled the prudent gardener, who waters the drooping plant, and continues to water it, but only whilſt the heavens withhold their rain. Zealous for the peculiar

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doctrines of his religion, he made no diſtinctions in his benevolence, not only tolerating, but doing good to thoſe, who could neither receive the creed, nor conform to the mode of worſhip eſtabliſhed by their country This ſingle prelate, by his wiſdom and beneficence, in the ſpace of five and forty years, much more than doubled the number of inhabitants of Niſmes; for, having found only twenty thouſand, he had the happineſs before his death of ſeeing fifty thouſand riſe up to call him bleſſed.

March 24, in the evening, we got to Montpellier; and the next day, after I had delivered my letters to the Count de Perigord, governor of the province, I began to explore the country.

The firſt object which attracted my attention was the aſparagus growing wild. Theſe are brought to table, but they are not ſo ſweet and agreeable as thoſe which have received cultivation, nor are they ſo large.

Wandering about beyond the Perou, I ſtumbled upon a beaked oyſter, (*oſtrea roſtrata*) and looking round, I ſoon diſcover-

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ed the ſpot where the precious relick had been depoſited, when this elevated ſpot was under the ſurface of the ſea. There is a regular ſtratum of theſe oyſters of about eighteen inches thickneſs, without the admixture of any other ſpecies, or of any other ſubſtance, extending eaſt and weſt, as may be ſeen in every quarry which has been opened in thoſe directions, and hiding itſelf under the Perou. Some of thoſe ſhells are found in the ſuperincumbent rock, and a few ſtragglers in the ſand above it.

In the Fauxbourg Boutoné, the limeſtone contains the echinus, or ſea urchin, and the ſcallop with deep ribs.

Early in the month of April, the weather being moſt inviting for excurſions, I determined to extend my walks to ſome more diſtant objects. Of theſe, the only one which deſerved to be noticed is a volcanic mountain, called Montferrier, deſcribed by M. Jubert. In aſcending towards this, I met with a phænomenon which frequently occurs, but which has never been accounted for. At a few yards before me I ſaw a whirlwind taking up

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a cloud of ſand, raiſing it obliquely in the air, and then carrying it before the wind as far as my eye could trace it. It has been ſaid, that the meeting of two winds, nearly in oppoſite directions, forms the whirlwind; and that the conſequence of this muſt be a vacuum in the middle, into which the air ruſhing with impetuoſity, carries even bodies which are ſpecifically heavier than itſelf. But to this ſolution there appears to be more than one objection; for, in the firſt place, as the ſand roſe with a rotatory motion, it ſhould have gone, like all other heavy bodies, not to the centre, but to the circumference. But, in the next place, taking this ſuppoſed vacuum for granted, bodies ſpecifically heavier than air ſhould deſcend and not riſe in it; unleſs, like the torricellian tube, it were open below, and hermetically ſealed above. To account for this effect by referring to the riſe of water-ſpouts at ſea, is only to explain one difficulty by another. When we ſhall know by what power in nature a cloud, containing many thouſand tons of water, is ſuſpended in the air, we ſhall be, perhaps, prepared to reaſon with a better

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a better proſpect of ſucceſs upon the nature and the cauſe of whirlwinds.

In the way to Montferrier the rock is all calcareous. At a lower level it is pudding ſtone, hard and compact, with both the charge and the cement calcareous. At a higher level, it is a calcareous concretion, or petrifaction by incruſtation, light and porous, like a ſponge, yet not ſo ſoft, incloſing leaves, ſticks, and ſnails; a ſubſtance which the French call *tuf*. This goes to a conſiderable depth, and lies upon the limeſtone. As we approach the mountain, the pudding ſtone and tuf give place to the living rock.

Montferrier is ſo completely covered with houſes, that it would be in vain to ſeek a crater; but, conſidering its conical form, and the volcanic ſubſtances of which it is compoſed, I can readily conceive it to have been once a burning mountain.

In the vicinity of Montpellier, calcareous rocks, charged with marine ptoductions, univerſally prevail, and are uſually covered with either ſand or clay. The clay being ſometimes interſperſed with calcareous matter and pyrites, the latter decompoſes; in

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conſequence of which, its acid uniting with the calcareous matter, forms a ſelenite, whilſt its iron gives a colour to the marle. If no calcareous matter is at hand, the acid ſet at liberty forms alum with the clay.

In the Cevennes, not far diſtant from Montpellier, mines and minerals abound, ſome rich in copper, others in lead and iron, but few which carry tin. One of theſe, a lode of about three feet thick, ſo poor as not to pay expences, produces iron, tin, and lead. In this mine, M. Chaptal, profeſſor of chemiſtry, and inſpector of the mines, tried an experiment which may be highly intereſting to the naturaliſt, if not to the adventurer in mines, by ſubmitting to a fiery trial many hundred weight, if not tons, of quartz and granite, taken contiguous to the walls of the lode. The iſſue was the production of tin, lead, and iron; although no eye could diſtinguiſhed the leaſt appearance of theſe metals, previous to their being committed to the furnace.

From this gentleman I obtained a ſubſtance, which had been lately diſcovered in all

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all the auriferous ſtreams in France; a ſubſtance which has certainly a ſtrong affinity to iron, yet differs eſſentially from it. It is in the form of ſand, is attracted by the magnet, and makes Pruſſian blue; but it is more obſtinate in the fire than platina, having never yet been fuſed in the ſtrongeſt furnace. It is, moreover, inſoluble in acids without heat, gives no inflammable air, and has never yet been calcined by any acid; beſides which, its ſpecific gravity is to iron as eleven to nine. From all theſe properties, we may at leaſt venture to ſuſpect, that this newly diſcovered ſubſtance is a modification of iron.

To a man who is devoted to the ſciences, no reſidence can be more delightful than Montpellier. Is he fond of chemiſtry? in M. Chaptal he will find a ſagacious guide, well qualified to conduct him in his purſuits, and to aſſiſt him in following nature as far as the moſt knowing have been able to trace her ſteps. The Abbé Bertholon will explain to him the principles of natural philoſophy, with a clearneſs and elegance of expreſſion peculiar to himſelf; and with an apparatus, perhaps the

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beſt in Europe, will demonſtrate the truth of thoſe principles by well choſen and by the beſt conducted experiments. For botany, he can no where find a more able profeſſor than Dr. Gouan. The lectures in every ſcience are free for all the world; it being a maxim with the French, that wiſdom ſhould open wide her gates, and, without diſtinction, receive all who wiſh to enter.

During my progreſs through the vineyards, I obſerved that vines are every where valued in proportion to their age. The expence attending the plantation and cultivation of a new vineyard is ſo great, that upon a good ſoil, and in ſituations eaſy of acceſs, corn is a more profitable produce.

The beſt wine was ſold in this vicinity laſt autumn for one halfpenny a quart, and wine for brandy was much cheaper. The abundance was ſo great, and the demand ſo diſproportionate, that they were obliged to diſtil the major part of their wines for brandy. Moſt of this will be ſmuggled into England. From the port of Cette alone, laſt year, there went upon this trade thirty-two veſſels, which, at three hundred tons

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tons each, a ton containing two hundred and fifty-two gallons, makes upwards of two million four hundred thouſand gallons; and the duty upon this, at nine ſhillings and ſix pence a gallon, would have been one million one hundred and forty thouſand pounds. All this was loſt to the revenue, and much more than this muſt of neceſſity be loſt, by the abſurd practice of laying on ſuch heavy duties. It is to be lamented, that the well known operation of lowering the duties upon tea, has not opened the eyes of Europe upon this ſubject, but more eſpecially thoſe of our government in England. We have indeed lowered the duty upon brandy to five ſhillings; yet whilſt it can be purchaſed in France for fifteen pence a gallon, unleſs we ſink the duty much lower than we have already ſunk it, the ſmuggler, with all his loſſes, will contrive to make a living profit.

Thirty gallons of wine produce five gallons of brandy; and this quantity in the vineyards laſt year (1785) coſt only fifty ſols, or about two ſhillings.

France is ſaid to contain one hundred millions of acres, of which they reckon that

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that little more than one-third is in a ſtate of cultivation; of this portion ſomething more than fifteen hundred thouſand acres are occupied by vineyards. If we allow their population to be five and twenty millions, we ſhall have four acres for each perſon.

As every thing which relates to their finance is likely to be new modelled, I need ſay little on that ſubject. Few countries ſtand in greater need of a reform, yet not only from the exemptions claimed by the nobles and the clergy, but from the privileges retained by many of the provinces at the time of their union to the reſt, it will require either a ſtrong hand, or moſt propitious circumſtances, to accompliſh this arduous undertaking. A nobleman of Berry told me, that on one ſide of a rivulet which flows by his chateau, ſalt is ſold at forty ſols a buſhel, and on the other at forty livres, that is, at twenty times as much. In conſequence of this, no leſs than two thouſand troops of horſe and foot were ſtationed on its banks to check the ſmugglers. The farm of ſalt was fifty-four millions of livres.

The

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The whole revenue being twenty-five millions ſterling, each perſon pays twenty ſhillings annually to the ſtate for its protection. If we reckon the revenue of England at fifteen millions, and the population at ſeven and an half, then each perſon will pay forty ſhillings. The people in France, it is true, have paid leſs in proportion to their numbers than the Engliſh, yet they have ſuffered more than in the ſame proportion from the tyranny, vexations, and oppreſſion of the farmers general, to whom they have been often ſold.

The price of labour, taking the average of France, may be conſidered as two and twenty ſols, or eleven pence per day for men, and ten ſols for women, employed in manufactures; yet a good weaver, working eighteen hours a day, will earn three livres ten ſols for himſelf and boy; ſhearmen will get two livres a day; ſpinning women four livres a month, and their board, deducting holidays; carpenters and maſons, twenty-four ſols, and two meals a day. In huſbandry, the men get in winter from ten to fourteen ſols a day, with a ſoup at noon; but in ſummer, from twenty to twenty-ſix ſols,

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ſols, and two meals a day. The women have half as much.

Converſing with gentlemen of the medical profeſſion in France, I ſee clearly that they have not made the ſame advancement in the ſcience of medicine as gentlemen who have been educated at Edinburgh. The French are fond of Boerhaave, and ſo devoted to Hippocrates, that I am perſuaded, in the caſe of fevers, they often, whilſt looking for the criſis, loſe the patient. They have almoſt univerſally a dread of the antimonial preparations; and when they venture to give the tartar emetic, it is in ſo ſmall a doſe as ſeldom to do much good. In the year 1566, the parliament of Paris forbad the uſe of antimony; and although, in 1624, this prohibition was reverſed, the fear which had been excited and kept up for more than half a century, continued to operate againſt this powerful medicine. Whilſt in Germany and England the ſcience has been advancing with the moſt rapid progreſs, the French phyſicians ſeem to have been creeping into day with all the timidity of doubt. One obvious reaſon may be aſſigned for this. With us the practice of medicine

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medicine leads to wealth and honor, whereas in France it leads to neither; the fees are contemptible, and, excepting in Paris, the profeſſion is deſpiſed.

On the ſixth of April I left Montpellier at five in the morning, with a volantier of Barcelona, having previouſly agreed with him for the uſe of his volantè. The common price is ſix livres a day, but a young traveller muſt not be offended if the volantier ſhould aſk twelve, and cloſe the agreement with him at nine. In this little light machine, with one good mule, you travel eight or ten leagues a day.

From Montpellier to Pezenas is eight leagues. The ſoil is ſandy. The rock is limeſtone. The fields are open, and produce corn, wine, and oil. At Pezenas are to be ſeen the extenſive ruins of a caſtle, which belonged to the Montmorency family. This ſtrong fortreſs was hewn out of the rock on which it ſtands, and appears to have been complicated and full of art. The walls are lofty, and about eight feet in thickneſs. The rock, which is perpendicular, is a maſs of ſhells, ſuch as turbinæ, oyſters, cockles, with a calcareous cement.

From

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From hence the circumjacent plain, decked with luxuriant verdure, and ſhut in by rugged mountains, affords a moſt delightful proſpect.

The next day we dined at Beziers, a city into which the canal of Languedoc is conſtantly conveying the wealth which flows from agriculture. Here the corn, the wine, the brandy, the olives, and the oil of a country formerly beyond the reach of commerce, find a ready market; and from hence all that tract of country is ſupplied, at a ſmall expence of carriage, with the productions of diſtant nations.

Between Pezenas and Beziers, but nearer to the former, there is a ſtratum of pudding ſtone, of which the charge is hard blue ſchiſt, retaining the angles and the edges, yet ſparingly ſcattered in a calcareous cement. Nearer to Beziers the limeſtone carries turbinæ, cockles, muſcles, oyſters, and ſcallops, deeply indented, and well defined.

In the afternoon we came early to Narbonne, having travelled eight leagues and an half this day. The leagues are of an uncertain

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uncertain length, ſome about three miles, others four.

All the way from Beziers we traverſe a rich country, and corn fields, ſhaded with vines, olives, mulberries, and almonds, forming at every ſtep the moſt enchanting views.

At Narbonne there is a little ſtream, which, by the induſtry of the inhabitants, proves to them a more certain ſource of wealth than if its ſands were gold.

This ſtream empties itſelf into a canal of more than half a mile in length, by the ſide of which thay have extenſive gardens, watered from it by hydraulical machines of remarkable ſimplicity.

They conſiſt of a vertical wheel of twenty feet diameter, on the circumference of which are fixed a number of little boxes, or ſquare buckets, to raiſe the water out of a well, communicating with the canal below, and empty it into a reſervoir above, placed by the ſide of the wheel. Theſe buckets have a lateral orifice to receive and to diſcharge the water. The axis of this wheel is embraced by four ſmall beams, croſſing each other at right angles, tapering

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tapering at the extremities, and forming eight little arms. This wheel is near the centre of the horſe walk, contiguous to the vertical axis, into the top of which the horſe beam is fixed; but near the bottom it is embraced by four little beams, forming eight arms ſimilar to thoſe above deſcribed, on the axis of the water wheel. As the mule, which they uſe, goes round, theſe horizontal arms, ſupplying the place of cogs, take hold, each in ſucceſſion, of thoſe arms which are fixed on the axis of the water wheel, and keep it in rotation.

This machine, than which nothing can be cheaper, throws up a great quantity of water, yet undoubtedly it has two defects: the firſt is, that part of the water runs out of the buckets and falls back into the well after it has been raiſed nearly to the level of the reſervoir; the ſecond is, that a conſiderable proportion of the water to be diſcharged is raiſed higher than the reſervoir, and falls into it only at the moment when the bucket is at the higheſt point of the circle, and ready to deſcend.

Both theſe defects might be remedied with

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with eaſe, by leaving theſe ſquare buckets open at one end, making them ſwing on a pivot fixed a little above their centre of gravity, and placing the trough of the reſervoir in ſuch a poſition as to ſtop their progreſs whilſt perpendicular, make them turn upon their pivot, and ſo diſcharge their contents.

From the reſervoir the water is conveyed by channels to every part of the garden; theſe have diviſions and ſubdiviſions or beds, ſome large, others very ſmall, ſeparated from each other by little channels, into which a boy with his ſhovel or his hoe directs the water, firſt into the moſt diſtant trenches, and ſucceſſively to all the reſt, till all the beds and trenches have been either covered or filled with water.

Nothing can ſurpaſs the luxuriance of their crops, nor the activity of thoſe who are here engaged in the cultivation of the ſoil.

In this delightful walk, taking notice of ſome bees who were returning loaded to the hive, I recollected that Narbonne was famous for its honey, and therefore deter-

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mined to taſte it before I left the city. For this purpoſe I called at an apothecary's, who is reported to keep the beſt and to ſell the moſt. His name is Dartiguelongue. The honey, which he produced, was delicate in its flavour, and beautifully white. This at Narbonne he ſells at fifteen pence a pound, and when it is for England, he conſigns it to a merchant at Cette.

The day following we travelled eleven leagues and an half, to Perpignan, the laſt city of any conſequence in France. It is ſaid to be well fortified, but of that I can form no judgment.

The ſoil all the way is ſandy. The rock is calcareous, and many of the mountains are covered, even to their ſummits, with vaſt maſſes of limeſtone which have rolled.

The whole of the Rouſillon is rich, and highly cultivated, even to the foot of the Pyrenees, abounding with corn, and wine, and oil, and ſilk, all of the beſt quality. The bleak and rugged mountains before us, at the diſtance of about three or four leagues, forming a ſtriking contraſt with the rich valley which they command. Even theſe

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theſe mountains are not ſuffered to remain uncultivated, but to a conſiderable height they feel the influence of increaſing capitals, enriched by the growing wealth of the more fertile plain. Winding up through the gorges of the mountains, you ſee vines and olives flouriſh in every ſpot where induſtry can place them; and, wherever the plough can go, you admire the luxuriance of the corn.

The views all the way up the Pyrenees are beautiful. As you approach their ſummit, Belgarde preſents itſelf, ſeated on a mountain eminent above the reſt, and commanding this paſs for a great extent. This fortreſs, the laſt in the French dominions, is more remarkable for ſtrength than beauty.

All through the Rouſillon, it is ſtriking to ſee the people carrying earth in little baſkets on their heads, for want of wheelbarrows. For the prevalence of this ſtrange practice I can aſſign no cauſe, unleſs it be taken from the mountains, where no better mode of conveying earth up the ſteep aſcent can be deviſed. Men are every where more inclined to imitation than to

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the fatigue of thinking, or of ſeeking for new inventions.

The ploughs they uſe are ſuited to the ſoil, and ſimilar to thoſe deſcribed already in coming up from the Rhone.

In this country you dine for two livres at the table d'Hote, and ſup for forty-five ſols, including bread, wine, and bed.

As you approach the borders, the officers of the doüane become more numerous, and, unleſs well fee'd, moſt impertinent and troubleſome. Notwithſtanding their numbers and their vigilance, the contraband trade is very briſk. They reckon more than fifteen hundred ſmugglers in the Pyrenees; men of deſperate reſolution, who, knowing the cruel puniſhments to which they ſhall be condemned if taken, travel well armed, and generally in ſtrong parties. A military force is ſometimes ſent againſt them, but to little purpoſe, as neither party is ever eager to engage. The ſmugglers, ſtrangers to ambition, and little influenced by the thirſt of military fame, without reluctance quit the field; and, unleſs when their ſuperiority is manifeſt and great, think only of ſecuring their retreat; whilſt the

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the ſoldier, regarding this ſervice as both dangerous and diſgraceful, has no inclination to the attack.

When theſe daring adventurers have the misfortune to be taken, ſome of them are hanged, ſome are broken upon the wheel, and ſome are burnt alive. How ſhocking to humanity, that governments by their bad policy ſhould lay ſuch ſnares for men! how eaſy would it be, by a different ſyſtem of taxation, to ſave theſe lives, to avoid theſe cruelties, to employ in profitable labour both him who is engaged in ſmuggling, and thoſe who are paid for watching him, to open a free communication with all the world, and thereby to cheriſh and promote the induſtry, the wealth, the happineſs of every commercial nation upon earth. As long as the governments of Europe ſhall continue to foment the ſubſiſting jealouſies of trade, and, by heavy duties, to hold forth high premiums to the ſmuggler, each muſt ſuffer in its proportion, each will be checked and reſtrained in the progreſs of its induſtry and wealth, each will abound with unprofitable ſubjects, and not one of them will be able to enforce a due obſer-

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vation of the laws. It is much to be lamented, when light is every where diffuſed, and when the eyes of Europe ſeem open to receive it, that light ſhould be diffuſed in vain, and that ſo little ſhould have been done by any nation to break thoſe fetters, which ignorance, in the dark ages of feudal anarchy, every where impoſed upon commerce.

JOURNEY

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JOURNEY

FROM THE

ENTRANCE OF SPAIN TO BARCELONA.

NO one, who has not himſelf experienced it, can conceive the ſatisfaction and delight with which a traveller looks down upon a country into which, for the firſt time, he is about to enter. Every thing attracts his notice, and his attention is pleaſingly engaged by a rich variety of forms and productions, of manners and of men, with which he had been unacquainted; and which, in proportion as he values knowledge, will at every ſtep increaſe his treaſure. The face of the country, the vegetable tribes, the animals, all are new, or at leaſt have ſomething new to him; and even thoſe with which he is moſt familiar,

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from peculiarities, for which they are indebted to the ſoil, or to the climate, ſtrike him with new beauties; or, ſhould they have no claim to beauty, at leaſt they have to him the charms of novelty.

Upon my firſt entrance into Spain, after I had caſt my eyes around to catch a general view of the country immediately before me, my attention was ſoon taken up with a phænomenon, which at the time was new to me. In aſcending the Pyrenees, after I had loſt ſight of the limeſtone, I ſaw nothing but ſchiſt to the very ſummit of theſe mountains; and pleaſed myſelf, as I looked back upon the country, which I had left behind me, to ſee how much it was indebted to this happy mixture of the limeſtone and the ſchiſt for its luxuriant crops. Theſe rocks, elevated to the higheſt regions, expoſed to the joint action of froſt and rain, broken to ſhivers and reduced to powder, driven by winds, or hurried down by torrents, the mouldering ſchiſt producing clay, the limeſtone its calcareous earth, and each of theſe contributing the ſand which it contained, unite their treaſures to enrich all the country below

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below them with a never-failing ſupply of marle.

Thus far I met with nothing to ſurpriſe me; but, after I had paſſed the ſummit of the mountains, and having entered Spain, began deſcending to the ſouth, expecting to meet more enchanting ſcenes, more luxuriant crops, and ſigns of greater wealth; the face of the country immediately before me appeared deſolate and barren, without one cheerful ſpot in view, on which the mind could reſt.

I muſt own I was at firſt inclined to attribute this diſmal aſpect to their want of induſtry, to ſome vice in their government, or to ſome error in their political œconomy; but, upon examination, I ſoon diſcovered the real cauſe of this barrenneſs, in the hungry nature of the ſoil, and the want of thoſe two ineſtimable feeders of vegetation, the limeſtone and the ſchiſt, which near the ſummit are ſeen only to the north; for the moment you begin deſcending to the ſouth, the rock changes, and you find the granite.

This circumſtance is not peculiar to the Pyrenees; it is obſerved on other lofty chains

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chains of mountains, and, as highly worthy of attention, may hereafter call for a particular diſcuſſion. The ſoil, which ariſes from the decompoſition of granite, is not friendly to vegetation; for although it contains all the component parts of marle, yet the ſand predominates, and the clay is in ſuch ſmall proportion, that the rains and dew contribute little to nutrition, paſſing quickly through the ſand, or being ſoon evaporated, and loſt in air. The proportion of theſe ingredients, which has been found moſt productive, is to have equal parts of clay and of calcareous earth, with one quarter of the whole a clean ſilicious ſand. This proportion has been aſcertained by the experiments of M. Tillet, as may be ſeen in the memoirs of the academy of ſciences for the year 1772.

It is impoſſible to paſs the Pyrenees without admiring the wiſdom of the treaty, A. D. 1660, to which they have given name, as having fixed the moſt natural of all boundaries, the ocean alone excepted, between two great commercial nations. There was a period when rivers made the moſt

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obvious limits of an empire; but in a ſtate of civilization, theſe change their nature, and are conſidered by all nations as the moſt valuable parts of their poſſeſſions; whereas the ſummits of mountains, as abounding with paſſes eaſy of defence; form a ſtrong barrier againſt a powerful neighbour, and a barrier which is naturally determined by the parting of the waters; and theſe ſummits being little ſuſceptible of cultivation, leave a convenient ſpace between the profitable poſſeſſions of the two adjoining nations.

The only uſeful vegetable productions of theſe high mountains are the ilex, and the cork tree; the latter very profitable on account of its bark.

When theſe are fifteen years old, they begin to be productive; yet not for the market; this maiden bark being only fit for fuel. At the end of eight years more, the bark improves, but does not arrive at its perfection till the third period; after which, for one hundred and fifty years, it yields a marketable commodity every ten years. The ſeaſon for barking is in July or

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or Auguſt, when they take ſpecial care not to wound the inner bark.

From Perpignan to Junquera, a village of ſix hundred and twenty-ſeven ſouls, and the firſt you meet with after you enter Spain, is ſeven leagues, or four French poſts.

Here the inns begin to exhibit their wretchedneſs. No bedſteads, but only three boards laid upon treſtles to ſupport a mattreſs; no bed curtains; no glaſs in the windows.

It is curious to ſee the peaſants exerciſe their ſkill in drinking without touching the mouth of the bottle with their lips; and the height from which they let the liquid fall in one continued ſtream, without either miſſing their aim or ſpilling a ſingle drop, is moſt ſurpriſing. For this purpoſe, the orifice of the ſpout is ſmall, and from their infancy they learn to ſwallow, like the Thracians, with their mouths wide open. See Horace, Lib. 1. Ode 36.

On the tenth of April, early in the morning, we left Junquera, paſſing for a conſiderable way by the ſide of a rivulet, which in winter is a raging torrent. The ſoil, as might

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might be well expected, is hungry ſand. The cultivated land is covered with vines, with olives, and with rye; the uncultivated abounds in cork trees. At the feet of the Pyrenees we find an extenſive valley, every where ſhut in by mountains, excepting only a ſmall opening to the ſea, which is near Caſtillon de Empurias, in the Bay of Roſes. In this extenſive plain, or rather baſon, which, as we look down upon it, ſeems flat and level, are many hills, ſome riſing bold, ſome gently ſwelling, and covered with various kinds of ſoil, but chiefly with decompoſed granite, which from local circumſtances has acquired more than its due proportion of clay, and thereby rendered the barren quartz exceedingly productive.

From Junquera we have three leagues to Figueras, a town of four thouſand ſix hundred and forty ſouls, where the Spaniards are now erecting a fortreſs, ſuppoſed to be impregnable. Of its ſtrength I am not qualified to judge; but for beauty I cannot conceive any thing to go beyond it. It contains quarters for one hundred and fifty companies of infantry, with five hundred horſe;

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horſe; apartments for ſixty officers, each with a kitchen, a dining room, and two ſpacious bed rooms; one long range of magazines for proviſions, and four for powder; all upon a great ſcale, and highly finiſhed. Theſe works are made bomb proof. To ſupply the garriſon with water, there is a capacious reſervoir under the parade, formed in the quarry from whence was taken all the ſtone for theſe extenſive buildings. The glacis, in moſt part of the fortification, is formed of the living rock, and the whole is protected by proper baſtions. It is ſaid, twelve thouſand men will be ſufficient to defend theſe works. At preſent there is a hill which commands the fort, but this the patient and perſevering induſtry of Spaniards will certainly remove, or at leaſt reduce below the level of their works.

It would be difficult to aſcertain how much labour has been loſt in the eſtabliſhment of this ſtrong hold; but we may venture to affirm, on the authority of thoſe who are competent to judge, that had the ſame ſums been expended in the cultivation of the ſoil, in the eſtabliſhment of farms,

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farms, in making canals, and mending roads, to invite ſtrangers into Spain, inſtead of building fortifications to keep them out, the face of the whole country had been changed, not merely in point of beauty, but of ſtrength. The folly of all offenſive wars begins to be underſtood in Europe, but more eſpecially in France; and as for defenſive war, the reſiſtance of America, by its ſucceſsful iſſue, and that of Corſica, which although not ſucceſsful, coſt the French five times more than the value of the conqueſt, prove that a country tolerably ſtrong in itſelf, and well defended by its inhabitants, needs no fortification to repel invaders.

Extenſive fortifications coſt immenſe ſums to erect, and ſo much to keep them in repair, that they are commonly ſuffered to decay. Every ſuch fortreſs requires an army to defend it, and when the moment of trial comes, the whole may depend on the weakneſs or treachery of a commander, and, inſtead of a defence to the country, may afford a lodgment to the enemy. If an able man happens to command, admitting the country to be both well peopled and well

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well governed, may not more be expected from him in the field than in the fortreſs? The moſt obſtinate reſiſtance the Romans met with was from a city that had no walls. In a diſcourſe of Baron Hertzberg not long ſince publiſhed, we may ſee what was the opinion of the late king of Pruſſia on this ſubject; for, whilſt he expended trifling ſums on his fortifications, he was at a vaſt expence in promoting agriculture and manufactures in his dominions; having, in the ſpace of a few years, built five hundred and thirty-nine villages, and eſtabliſhed in them forty-two thouſand ſix hundred and nine families, on the banks of the Oder, the Havel, and the Elbe; beſides three thouſand families on the Netz and Warthe.

Fortifications are only needful for the maintainance of uſurped dominion, or to protect the borders of a kingdom from the incurſions of a barbarous nation, whoſe object is to plunder.

The price of proviſions at Figueras is remarkable: beef and bread are each about three halfpence ſterling per pound, troy weight, but mutton is nine pence. The reaſon

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reaſon of this diſparity is, that they plough with oxen, and have few ſheep.

Between this town and the Col de Oriol, the rock, wherever it appears, is lime-ſtone.

From Figueras to Gerona is ſeven leagues. About half way between theſe places, we paſs over a high mountain, called la Cueſta Regia; in aſcending which we find a baſe of pudding ſtone, whoſe charge is ſmooth, rounded, ſilicious gravel, with a calcareous cement; the top and all the middle region is ſchiſt; but in deſcending near the bottom, the ſame pudding ſtone appears again; from which I conclude that this kind of rock pervades the mountain, and forms its baſe. This phænomenon is worthy of attention, and deſerves a more minute inveſtigation and deſcription than a haſty traveller can be-ſtow upon it.

The ſituation of Gerona is delightful; on a declivity, looking to the S. W. and fed by a rich well watered valley, which is open to the meridian ſun, but bounded to the North and to the Eaſt, and ſheltered

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by high mountains. The whole city ſeems to be built of the pudding ſtone.

The ſoil is ſand and clay, productive of all kinds of grain; ſuch as beans, peas, lupines, wheat, and barley, with ſaintfoin and clover. This land they dig with tridents or three pronged forks, and till with oxen. The ploughs are ſuch as I have before deſcribed, with this difference, that they have only one handle, and inſtead of pins, they have two iron wings fixed to the ſhare, extending beyond the heel, to ſupply in ſome meaſure the place of mould-boards.

All the way to Mataró, the ſoil, and even the ſand of the ſea ſhore, is nothing but the quartz and mica of decompoſed granite; which, when not robbed of its clay, is made productive.

Nothing is more common than to jump at a concluſion; but if, without ſubjecting myſelf to ſuch a charge, I might venture to hazard a conjecture, I ſhould be inclined to think, that wherever vitreſcent ſand appears, whether on the ſea ſhore, or on calcareous mountains it comes from granite.

After

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After having travelled four leagues and an half from Gerona, we arrived at Granotta, where we ſtopped to dine. Within three leagues and an half of Calella, the face of the country changes; for here, leaving the valley, we aſcend once more the mountains, which, as I expected, are granite. This variety is pleaſing, for, although they are ſcarcely ſuſceptible of cultivation, except for vines, nature has by no means neglected them, but with more than common liberality has clothed them with perpetual verdure, and given them in great abundance the elegant arbutus, with a rich variety of flowering ſhrubs and aromatic herbs.

Having paſt theſe ever fragrant mountains, we deſcend again into a valley, which is protected from the incroachments of the ſea by lofty cliffs. In this valley we croſs a river, which ſhews the nature of the country through which it flows; for, although at preſent it contains little water, and may be forded without danger, yet, after haſty ſhowers, it rages with ungovernable fury, and carries every thing before it. The valley being flat, and the ſoil,

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to a conſiderable depth ſharp ſand, without any natural coheſion, the torrents, unconfined by banks, have widened their channel to the extent of near a quarter of a mile. This ſand is evidently derived from granite, freed perfectly from clay by conſtant waſhing.

Having paſſed the river, not far diſtant from its mouth we aſcended a hill, from whoſe ſummit we looked down upon a ſea coaſt, where all nature wears a ſmiling aſpect. Throughout the whole tract of country we left behind us, the vines had not begun to bud, and the birds were ſilent on the mountains; but here the vines ſhewed long branches with bloſſoms and young fruit, whilſt the birds ſeemed to vie with each other, which ſhould charm the ear with moſt delightful melody. The little hills were covered with vines and olives, and the ſea ſeemed all alive with fiſhing boats. From this delightful ſpot numerous villages appear as far as the eye can reach.

In one of theſe, *Calella*, which, according to the genius of the Spaniſh language, is pronounced Callelia, we took up our lodging

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lodging for the night. It has eight hundred and eighty-ſix ſouls, and employs near fifty fiſhing boats.

The next morning, when we ſet forward on our journey, about five, I was not a little ſtruck to ſee children, with old men and women, each carrying a little baſket, watching, preciſely as in the ſouth of France, for the dung of mules and horſes which were paſſing by. This practice, whilſt it implies poverty of ſoil, evidently proves that for induſtry at leaſt they deſerve highly to be praiſed.

The conduct of farmers in the weſt of England is the reverſe of this. Their dependance for manure being wholly on ſand and weeds, the produce of the ocean, they neglect the more obvious ſource of plenty to be derived from cattle. They ſet a proper value upon what the Catalans deſpiſe; but, in return, theſe are careful to collect the treaſure which the others ſuffer to be loſt; whereas the true wiſdom would be to avail themſelves of both.

In going from Calella to Mataro, four leagues, the way is wholly by the ſea ſide;

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the firſt part of it over granite rocks, the latter on the beach.

Mataro, a flouriſhing ſea port of nine thouſand ſix hundred and ſeventy-nine ſouls, has, for its loyalty and attachmentto the preſent family, been made a city. Here are three convents for men, and two for women, with one general hoſpital. It gives employment to nineteen looms, ſixteen ſtocking frames, makes much lace, prints linens for America, and is diſtinguiſhed for the excellence of its red wine. Scarcely one idle perſon is to be ſeen. It is however to be lamented, that ſo much of their labour ſhould be loſt by thoſe who are engaged in weaving ribbons; for inſtead of making many at the ſame time, all their looms are ſingle. If this proceeds from ignorance, government ſhould take care to have them better taught; if it is the effect of prejudice, they ſhould be allured by premiums to become greater œconomiſts of time.

All through Catalonia you admire at every ſtep the induſtry of the inhabitants, who, working early and late, give fertility to a ſoil which naturally, except for vines, is

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is moſt unproductive; but when you come to Mataro, you are perfectly enchanted. The farms are ſo many gardens, divided every where into beds of about four feet wide, with a channel for the paſſage of the water to each bed. Every farm has its Noria, a ſpecies of chain pump, which, from its extreme ſimplicity, ſeems to have been the invention of the moſt remote antiquity. By means of this machine they every morning draw a ſufficient quantity of water from the well for the ſervice of the day, and in the evening diſtribute it to every quarter, according to the nature of their crops. The reſervoirs, into which they raiſe the water, are about twenty, thirty, or even forty feet ſquare, and three feet high above the ſurface of the ground, with a ſtone cope on the wall, declining to the water, for the women to waſh and beat their clothes upon. The ſoil is ſo light, being nothing but ſand from the decompoſition of the granite, that they plough with two oxen or one horſe, or even with a mule; yet, by the aſſiſtance of the water, it is made fertile, and produces on the ſame ſpot of ground corn, wine, oranges, and

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olives. The American aloe is here planted as a fence.

When we drew near to Barcelona, we had to croſs a river, in which we counted fifty ſelons, clothed in green, and employed in clearing the channel, whilſt centinels ſtationed at convenient diſtances prevented their eſcape.

It is curious to obſerve this mark of contempt for the Moors, in clothing their vileſt criminals, and even their hangman, in green, the ſacred colour of Mahometans, more eſpecially in Africa.

All the way from Montpellier to Belgarde, the road is wide, and kept in excellent repair; but from the entrance into Spain to within about two leagues of Barcelona nothing ſeems to have been done ſince the foundation of the world, either to expedite the progreſs of a traveller, or even to ſecure his ſafety, ſhould he have occaſion to paſs this way. Although to an Engliſhman theſe roads muſt appear deteſtable, yet if we look back thirty or forty years, to the time when moſt of our provincial roads were in the ſame condition, and reflect how much has been done within that period,

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period, we may hope that the induſtry of Catalans will not overlook an object of ſo great importance; and that our children, who viſit thoſe delightful regions, will paſs through them with leſs hazard and more comfort than their fathers did before them.

The vernal ſun, ſouth of the Pyrenees, is reviving to the traveller; but the ſeaſon of lent has one circumſtance attending it, which, in a catholic country, is not perfectly agreeable, nor indeed conducive to his health; for, during theſe forty days of abſtinence, he muſt learn to live on fiſh and vegetables; becauſe, although in Spain they have now four days in the week, in which, by ſpecial indulgence, they may eat fleſh, few people are inclined to uſe this privilege.

The accommodations, if not in lent, are more than tolerable, and cheaper than either in England or in France. You pay for a volanté, with a good mule, attended by a guide, five ſhillings a day, without further charge; fifteen pence for dinner, without any limitation in quantity of wine; twenty pence for ſupper and your bed; and,

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and, in the morning, two pence for chocolate. Theſe being the regular and ſtated prices, leave no room for diſputing with the landlord, as the moſt patient are ſometimes obliged to do in France.

In all this country oxen draw heavy loads on the high way, and move with ſpirit.

BARCELONA.

IN this journey I made the greater ſpeed, in order to ſpend the holy week at Barcelona; and I have no reaſon to repent the pains I took to be preſent at their ſolemnities. No citizens perhaps beſtow ſo much expence, and no magiſtrates can pay more attention, than the citizens and magiſtrates of Barcelona, in the proceſſions of the holy week.

On Wedneſday, the 12th of April, I arrived, and the next morning early I viſited the churches, to ſee the preparations they had made for the entertainment of the evening, in which they were to repreſent the laſt ſufferings of the Redeemer. In every

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every church I found two images, as large as life, diſtinguiſhed from the reſt as being ſtationary, and the more immediate objects of their devotion; the one repreſenting Chriſt as taken from the croſs, the other the Virgin in all her beſt attire, pierced by ſeven ſwords, and leaning over the recumbent body of her ſon. Behind theſe images, a theatre with colonades, ſupporting a multitude of wax tapers, dazzled the ſight, whilſt the ear was charmed by the harmonious chaunting of the choir,

More than a hundred thouſand perſons all the morning crowded the ſtreets, hurrying from church to church to expreſs the warmth of their zeal, and the fervor of their devotion, by bowing themſelves in each, and kiſſing the feet of the moſt revered image. The ſpectators were chiefly natives of the city, but many upon ſuch occaſions reſort to Barcelona from the numerous adjacent villages, and ſome from diſtant provinces.

Towards the cloſe of day the pageant appeared, moving with ſlow and ſolemn pace along the ſtreets, and conducted with the moſt perfect regularity. The laſt ſup-

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per of Chriſt with his diſciples, the treachery of Judas, attended by the prieſts, together with the guards, the flagellation, the crucifixion, the taking from the croſs, the anointing of the body, and the burial, with every tranſaction of the cloſing ſcene, and the events ſubſequent to the paſſion of our Lord, were repreſented by images large as life, placed in proper order on lofty ſtages, many of which were elegant, and all as highly ornamented as carving and gilding, rich ſilks, brocades, and velvets, with curious embroidery, all executed by their moſt ſkilful artiſts, could render them. No expence was ſpared either in the materials, the workmanſhip, or the wax lights, which, with the moſt ſplendid profuſion, were conſumed upon this occaſion. Each of theſe ſtages was ſupported on the ſhoulders of ſix men, who were completely hid by a covering of black velvet hanging round the margin of the ſtage, and reaching nearly to the ground. This proceſſion was preceded by Roman centurions cloathed in their proper armour; and the ſoldiers of the garriſon brought up the rear. The intermediate ſpace was occupied by the groups

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groups of images above deſcribed, attended by eight hundred burgeſſes, clothed in black buckram, with flowing trains, each carrying a flambeau in his hand. Beſides theſe, one hundred and fourſcore penitents engaged my more particular attention. Like the former, they carried each a flambeau, but their dreſs was ſingular, ſomewhat reſembling that of the blue-coat boys of Chriſt's hoſpital in London, being a jacket and coat in one, reaching to their heels, made of dark brown ſhalloon, with a bonnet on their head, like what is called a fool's cap, being a cone covering the head and face completely, and having holes for the eyes. The deſign of this peculiar form is to conceal the penitents, and to ſpare their bluſhes. Theſe were followed by twenty others, who, either from remorſe of conſcience, or having been guilty of more atrocious crimes, or for hire, or with the moſt benevolent intention of adding to the common fund of merit for the ſervice of the church, walked in the proceſſion bare footed, dragging heavy chains, and bearing large croſſes on their ſhoulders. Their penance was ſevere; but, for their comfort,

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comfort, they had aſſigned to them the poſt of honour; for immediately after them followed the ſacred corpſe, placed in a glaſs coffin, and attended by twenty-five prieſts, dreſſed in their richeſt robes. Near the body a well choſen band with hautboys, clarinets, French horns, and flutes, played the ſofteſt and moſt ſolemn muſic. This part of the proceſſion wanted nothing to heighten the effect. I am perſuaded that every one who had a ſoul for harmony felt the ſtarting tear.

In the proceſſions of the preſent day, practices, which had crept in, when chivalry prevailed, with all its wild conceits, practices inconſiſtent with ſound morals, and offenſive to humanity, are no longer to be ſeen. The civil magiſtrate, interpoſing his authority, has forbidden, under the ſevereſt penalties, abominations which, as the genuine offspring of vice, could not have ventured to appear, even in the darkeſt ages, unleſs in the diſguiſe and under the ſanction of religion. The adulterer, if he will court the affections of his miſtreſs, no longer permitted publicly to avow his paſſion, to ſcourge himſelf in her preſence,

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and by the ſeverity of his ſufferings to excite her pity, muſt now ſeek the ſhade, and if he feels himſelf inclined to uſe the diſcipline, it muſt be where no human eye can ſee him. In theſe ages of ſuperior knowledge and refinement, men look back with wonder at the ſtrangely inconſiſtent conduct of their progenitors, when, ignorant of every thing but arms, they embraced and carried with them a religion whoſe influence they never felt, and the purity of whoſe precepts they did not underſtand. It was not in Spain only that ſuperſtition reared her throne, all Europe acknowledged her dominion, and in every nation in which the victorious banner of the Goths and Vandals was diſplayed, we have ſeen execrable vices cheriſhed in the ſame breaſt which appeared to glow with fervid zeal for the glory of God, at leaſt as far as could be teſtified by the moſt ſtrict attention to the ceremonials of religion. All Europe is emerging from this ſtate of Gothic ignorance, and Spain, although the laſt, it is to be hoped will not be the leaſt enlightened.

When the pageant was over, the people

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retired quietly to their habitations; and although more than a hundred thouſand perſons had been aſſembled to view this ſpectacle, no accident of any kind was heard of. The day following, before eight in the morning, another proceſſion of the ſame kind, but more elegant than the former, was conducted through the ſtreets, and in the evening, a third, at which aſſiſted all the nobles of Barcelona, each attended by two ſervants, and, in rotation, carrying a crucifix large as the life, and ſo heavy, that no one for any length of time could ſuſtain the weight of it. The ſtages and the images were not the ſame, which had been exhibited the preceding day, but repreſented all the ſame events. Every ſtage was completely occupied by images large as life, and ſurrounded by a border of open carved work ſuperbly gilt; and the bearers, as in former inſtances, were hid by curtains of black velvet, richly embroidered. Two hundred penitents in grey attended as before. In each of theſe proceſſions were many children, ſome not more than three years old, carrying little croſſes, with each a flambeau in his hand. Theſe are uſed in

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all proceſſions, even in the middle of the day.

The different ſtages, with their groups of figures, belong to different bodies corporate, either of the nobles or artificers, and are ranged in the proceſſions according to their right of precedency. Theſe groups are called the myſtery of the corporation. That of the French artificers is an Ecce homo, but for ſome reaſon the conſul walks before it, attended only by the meaneſt ſubjects of his nation.

The ſucceeding day, at nine o'clock in the morning, when, as being Saturday, I had no expectation of ſuch an event, the Reſurrection was announced by bells ringing, drums beating, cannons firing, people ſhouting, colours flying, and, in a moment, all the ſigns of mourning were ſucceeded by tokens of the moſt frantic joy.

The proceſſions were intermitted for ſeveral years, prohibited by government on account of abuſes which had crept into them, and, in their place, the carnival was ſubſtituted, with the ſame licentious riot and confuſion as I have deſcribed in Paris, and as all who have paſſed the carnival in

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Italy have ſeen. But after the inhabitants of Barcelona, in the year 1774, had reſiſted the demands of government, requiring them to draft every fifth man for the army, like the other cities and provinces of Spain, the carnival was forbid, and the trade, which had been always briſk at this ſeaſon, felt a loſs, which made the citizens call loudly for the reſtoration of their proceſſions.

After Eaſter they have one upon a ſmaller ſcale; about ſeventy prieſts, each with a lighted flambeau in his hand, preceded by a herald with his banner, carry the hoſt, under a canopy of crimſon velvet, to thoſe who had not been well enough to receive it in the churches.

The ſtreets of Barcelona are narrow and crooked, like thoſe of all ancient cities. The old Roman town may ſtill be diſtinctly traced, occupying a ſmall eminence in the centre of the preſent city, with one of its gates and ſome of its towers, well preſerved. In this are many ſarcophagi, altars, images, and inſcriptions, with a temple of Neptune, all which have been well deſcribed by antiquarians. It was here that

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that Ferdinand and Iſabella received Columbus, returning from America, and from hence that navigator ſailed on his ſecond expedition, in the year 1493.

In viſiting the churches of Barcelona, an obſervation is confirmed, which had occurred even in the moſt contemptible of the country villages ſouth of the Pyrenees. It is evident that all their decorations were invented about the beginning of the ſixteenth century, after the gold and ſilver of America had been brought to Spain, and every altar piece, with every column, ſhews that their improvement in taſte did not keep pace with their increaſe of wealth. Riches came upon them by ſurpriſe, and found them unprepared to make a proper uſe of the abundant treaſure. Hence even the compoſite and the Corinthian pillars are loaded with new ornaments, and whether fluted or contorted, they are entwined by ivy or by vines, and are almoſt hid by the multitude of angels fluttering round them, or by cherubs climbing up the branches; and the whole of this prepoſterous aſſemblage is covered with one glare of gold. The preſent generation is en-

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lightened, and their taſte is much refined; yet they want reſolution to reform abuſes, and to ſtrip off thoſe ornaments, to which the blind zeal and devotion of their fore-fathers have given ſanction. One of their beſt writers has remonſtrated, and his remonſtrances have engaged the attention of government to make wiſe regulations for the future.

They have in this city an academy for the noble arts, open to all the world, in which all who attend are freely taught drawing, architecture, and ſculpture, under the direction of D. Pedro Moles, and others, who, like him, excel in the branches they profeſs. For this purpoſe, they have ſeven ſpacious halls, furniſhed at the king's expence with tables, benches, lights, paper, pencils, drawings, models, clay, and living ſubjects; they aſſemble in the morning from ten to twelve, and in the evening from ſix to eight, in winter, and from eight to ten in ſummer.

This academy is well attended; I counted one night upwards of five hundred boys, many of whom were finiſhing deſigns, which ſhewed either ſuperior genius or more than common application. It is not

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not to be imagined that all theſe boys, or perhaps any of them, are deſtined to be painters: this was not the intention of government, much leſs of count Campomanes, who ſuggeſted the inſtitution. Moſt, if not all theſe youths, are apprenticed to trades; and it is well imagined, that every other art may receive ſome aſſiſtance from this, whoſe peculiar property it is to excel in imitation. Such inſtitutions are much wanted in England. Not only the ſculptor, the architect, and the engineer, but the coachmaker, the cabinet-maker, the weaver, nay even the taylor and the haberdaſher, may derive great advantages from that accuracy of ſight, and that fertility of invention, which are acquired by the practice of drawing and deſigning.

D. Pedro Moles is an artiſt whoſe works have been univerſally admired for the beauty of his ſtroke, and the force of his expreſſion. It is a pity that the graver was ever taken from his hand; he may perhaps be more uſefully employed in ſuperintending this academy, but, as an engraver, he would have acquired a more laſting fame, and have made a better proviſion for his family.

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One of the ſeven halls is fitted up as a nautical ſchool, and is provided with every thing, which is needful to teach the art of navigation. The ſtudents, who at preſent are only thirty-ſix, aſſemble every morning from eight to ten, and every evening from three to five. Since the firſt eſtabliſhment of this uſeful ſeminary, they have ſent out more than five hundred pilots, qualified to navigate a veſſel to any quarter of the globe.

Equally well furniſhed with the preceding, and equally well conducted is the military academy, in which are three magnificent apartments for the ſtudents to purſue their ſtudies, from the firſt elements of the mathematics, to the higher branches of their profeſſion. This and ſimilar academies, eſtabliſhed by the reigning monarch, are of vaſt importance to the nation, as furniſhing a ſufficient ſupply of engineers in time of war, without the neceſſity, as in former periods, of depending wholly on their allies. Theſe ſeminaries in Spain are the only ſchools in which the mathematics can be ſtudied to advantage; for although, in all the univerſities profeſſors are appointed, they are ſaid to be wholly ignorant of this ſcience,

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ſcience, which they profeſs to teach. V. Camp. E. P. Ap. 1. p. 292.

Beſides theſe inſtitutions for the inſtruction of ſuch as are devoted to arts or arms, there are not wanting ſome of more general utility, acceſſible to all the citizens without diſtinction. Theſe are a cabinet of natural hiſtory, and the public libraries, of which there are four; three general, and the other confined to medicine and ſurgery; the cabinet belongs to D. Jaime Salvador. From the reports of this collection, I had formed high expectations, but I muſt confeſs myſelf diſſatisfied. Some thirty or forty years ago, it may have been worthy of attention, but the ſcience itſelf, and the cabinets of the curious, are ſo much improved, that collections, which at remoter periods excited wonder, are in the preſent day juſtly regarded with cold indifference. The general libraries are thoſe of the biſhop's college, of the Carmelites, and of the Dominicans. This laſt I found moſt worthy of attention, as containing more modern books of value than either of the former. Among theſe, ſome of the moſt conſiderable were the ruins of Palmira; Raphael's Heads, by

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Fidanza; Duhalde's China; Monumens de la Greece; Hiſtoire genealogique de la Maiſon Royale de France, & des anciens Barons, par le P. Anſelme; Antichita di Ercolano; Muratori Theſaur. vet. Inſcriptionum; Numiſmata Vir. illuſt. ex Barbadica gente; Danubius Pannonico Myſicus. Theſe may ſerve to ſhew that the collection is not contemptible. In ſhort, whatever ſtudies a man may be deſirous of purſuing, he will find in one or other of theſe libraries the beſt books, to which he may have acceſs ſix hours every day, excepting holidays. In the convent of the Dominicans there is one apartment filled entirely with books prohibited by the inquiſition, and, in order that no one may be tempted to peruſe them, all the vacant ſpaces are filled with devils cracking human bones, it is to be ſuppoſed of heretics. Leſt, however, this ſight ſhould not ſuffice to check a prying diſpoſition, they are well ſecured by lock and key, and no one has acceſs to theſe without a ſpecial licence.

In the cloiſter of the Dominicans there are more than five hundred records of ſentences paſſed on heretics, containing their name, their age, their occupation, their

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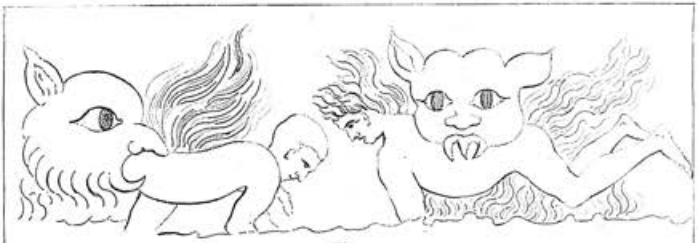

Barcelona in the Convent of the Dominicans.

Oliver Boer. Trabajedor, heretico, condenadoen Persona. 27 de October de 1566.

Inquisitorial Mercy.

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place of abode, the time when they were condemned, and the event; whether the party were burnt in perſon or in effigy, or whether he recanted and was ſaved, not from the fire and the faggot, for then he might relapſe, but from the flames of hell. Moſt of theſe were women. The firſt date is A. D. 1489, and the laſt, 1726. Under each inſcription there is a portrait of the heretic, ſome half, others more than three parts, devoured by devils. I was ſo much ſtruck with the fantaſtic forms, which the painters had given to their dæmons and the ſtrange attitudes of the heretics, that I could not reſiſt my inclination to copy ſome of them, when no one was walking in the cloiſter. Some time after this, ſitting with one of the inquiſitors, who did me the honour of a viſit, he in a careleſs manner took up my memorandum book, and as chance would have it, opened preciſely on the leaf which contained my drawings: I laughed; he coloured; but not one word eſcaped from either at the time. Fifteen months after this, when I returned to Barcelona, he ſmiled, and ſaid, "You ſee that I can keep a ſecret, and that we are not ſtrangers to principles of honour."

During

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During my reſidence at Barcelona, I had an opportunity of ſeeing all the courts of the inquiſition aſſembled in a grand proceſſion to celebrate the feaſt of S. Pedro Martyr, their patron ſaint, in the church of St. Catharine of the Dominicans. Happy had it been for Chriſtendom if all their feſtivals had been as innocent as this. It is, however, univerſally acknowledged, for the credit of the corps at Barcelona, that all its members are men of worth, and moſt of them diſtinguiſhed for humanity.

Viſiting the churches at all hours, whenever any ſervice was performed, I made a party with ſome friends to hear a penitential ſervice in the convent of St. Felipe Neri, on Friday evening of April 28. The firſt part of the Miſerere was no ſooner ended than the doors were ſhut, the lights were extinguiſhed, and we remained in perfect darkneſs. At this moment, when the eye could no longer find an object to diſtract the mind, the attention was awakened by the voice of harmony, for the whole congregation joined in the Miſerere, which they ſung with pleaſing ſolemnity; at firſt with ſoft and plaintive notes; but having laid bare their backs, and prepared

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them for the ſcourge; they all began nearly at the ſame inſtant to uſe the diſcipline, raiſing their voices, and quickening the time, increaſing by degrees both in velocity and violence, ſcourging themſelves with greater vehemence as they proceeded, and ſinging louder and harſher, till at the end of twenty minutes, all diſtinction of ſound was loſt, and the whole ended in one deep groan. Prepared as I had been to expect ſomething terrible, yet this ſo far ſurpaſſed my expectation that my blood ran cold; and one of the company, not remarkable for ſenſibility of nerves, being thus taken by ſurpriſe, burſt into tears.

This diſcipline is repeated every Friday in the year, oftener in Lent, and is their daily practice during the holy week. I was not at liberty to aſk what advantage they derived, or what benefits they expected to receive from this ſeverity; yet, from the prevalence of vice in Spain, I fear this practice has little if any tendency to reform their morals.

The hoſpicio, or houſe of induſtry for the poor next attracted my attention. This inſtitution originated in the year 1582, much

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much about the time when the poor began to occupy the ſerious attention of all the governments in Europe. With the houſe of induſtry is united the hoſpital of mercy, which, in the year 1699, was put under the care of the nuns of St. Francis, called Monjas Terciarias de S. Franciſco. The whole was reformed in 1772. In this eſtabliſhment they provide for children of parents who are burthened with a numerous offspring, for beggars, and for other objects of diſtreſs. In the year 1784, they had 1466 paupers; the year following 1383; and, when I was there in 1785, the number was 1460, the average being fourteen hundred and thirty-ſix. Of this number, about one thouſand are able to work, three hundred are idiots, and the reſt are little children. The whole expence of them is about forty-eight thouſand two hundred livres Catalan, or about five thouſand one hundred and ſixty-four pounds ſterling per annum. The king allows for each pauper fourteen maravedis per day to purchaſe a ration of bread. Theſe are equal to one penny ſterling, or nearly ſo. The voluntary contribution amounts to about fifteen thouſand livres Catalan,

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Catalan, and the deficiency is made up by the biſhop. The women and children are employed in knitting, ſpinning, and in making lace. The men card, comb, ſpin, and weave cotton, flax, and wool. The produce of their labour is contemptible, being at the rate only of one penny each per day, ſhould we allow, which cannot be allowed in Spain, three hundred working days, and one thouſand paupers fit to be employed. Yet this produce is greater in proportion than the average of our workhouſes in England. Although no paupers can be either better clad, better fed, better attended, or better lodged, or can meet with greater tenderneſs when they are ill, they cannot readily forget their loſs of liberty. All theſe comforts, therefore, are deſpiſed when compared with freedom, and few, beſides the moſt decrepit, would remain within thoſe walls if they could be permitted to beg their bread from door to door. This principle, however, is productive of much good; for moſt of the young men in Barcelona, of any worth or ſpirit, form themſelves into clubs for mutual relief, in the ſame manner, and nearly upon the plan adopted by our friendly ſocieties in England.

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England. Theſe fraternities have each its firm, taken from the name of the Saint to whoſe protection it is recommended. They are upon the moſt reſpectable footing, and being well conducted, leave none but the moſt improvident and moſt worthleſs ſubjects to be diſgraced by confinement among fools and madmen. Thoſe who are able to work, but chooſe rather to live in idleneſs and vice, are left to the correction of the laws.

There is one houſe of correction, which is too remarkable to be paſſed over in ſilence. It embraces two objects; the firſt is the reformation of proſtitutes and female thieves; the ſecond, the correction of women who fail in their obligation to their huſbands, and of thoſe who either neglect or diſgrace their families. The houſe for theſe purpoſes being divided into diſtinct portions, without any communication between them, the one is called *real caſa de galera*, and the other *real caſa de correccion*. For each of thoſe, who are ſhut up in the former, the king allows ſeven deniers to purchaſe eighteen ounces of bread, and nine deniers, which is nearly one penny ſterling, to procure meat. The fund for this

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this ariſes from fines; but to aid this fund, the women are obliged to work as long as they can ſee. By their labour they earn about five ſhillings a month, half of which they have for themſelves, whilſt, of the other half, the alcayde or governor has one-tenth to ſtimulate his attention to his duty. Theſe women, working thus from light to light, would earn much more were it not for the multitude of holidays. The ladies, who deſerve more ſevere correction than their huſbands, fathers, or other relatives can properly adminiſter, are confined by the magiſtrates, for a term proportioned to their offences, in this *royal* manſion, or caſa *real* de correccion. The relation, at whoſe ſuit they are taken into cuſtody, pays three ſueldos, or four pence halfpenny per day for their maintenance; and with this ſcanty proviſion they muſt be contented. Here they are compelled to work, and the produce of their labour is depoſited for them till the time of their confinement is expired. The whole building will contain five hundred women; but at preſent there are only one hundred and thirteen. Among theſe are ſome ladies of condition, who are ſuppoſed to be viſiting ſome

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ſome diſtant friends. Here they receive bodily correction, when it is judged neceſſary for their reformation. This eſtabliſhment is under the direction and government of the *regente de la audiencia*, aſſiſted by the two ſenior criminal judges, with the alcayde and his attendants. One of theſe judges conducted me through the ſeveral apartments, and from him I received my information. Among other particulars, he told me, that they had then under diſcipline, a lady of faſhion, accuſed of drunkenneſs; and of being imprudent in her conduct. As ſhe was a widow, the party accuſing was her brother-in-law, the marquis of ——.

The judges of this court are univerſally acknowledged to be men of probity, and worthy of the high degree of confidence thus placed in them. One of them, Don Franciſco de Zamora, to whom I am indebted for the moſt polite attentions, is a gentleman of indefatigable application, and of univerſal knowledge.

The *audiencia* mentioned above, although a modern inſtitution, bears ſome reſemblance to the courts of Weſtminſter Hall,

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Hall, and a ſtill greater to the parliaments in France, having the adminiſtration of juſtice, civil and criminal, committed to it, with the government, both œconomical and political, of the whole province, like the ancient courts of all the feodal ſovereigns. The captain general and governor of Catalonia is preſident of the audiencia, with a vote. This tribunal, which is ſupreme, and receives appeals, is divided into three courts, one criminal, the other two civil, and when united into one, œconomical.

In each of theſe are five judges. The kings of Arragon, and after them the ſovereigns of the united empire of Caſtile and Arragon, were accuſtomed to appoint viceroys of Catalonia, till Philip V. in the year 1716, changed the government of this province, eſtabliſhed the audiencia, and appointed his captain general to preſide in it.

Beſides theſe general courts, there is one eſtabliſhed for commerce, which is again ſubdivided. Of the ſubdiviſions, one being judicial, determines differences between the merchants; the other has the government of all arts and manufactures.

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The whole city of Barcelona is divided into five diſtricts or wards, over each of which preſides one of the five alcaldes del crimen, or judges of the criminal court of the *audiencia*, with his *promotor*, *eſcrivano*, *alguacil*, *portero*, and *alcaldes de barrio*, to determine, in the firſt inſtance, all cauſes both civil and criminal between the inhabitants, and to preſerve the peace in their ſeveral wards. The *alcaldes* de barrio, of which each ward chooſes annually eight, reſemble our conſtables. But beſides theſe two *alcaldes mayores* are conſervators of the peace, and juſtices for the city at large.

The government of Barcelona, as far as relates to political œconomy, is committed to a court of twenty-four *regidores nobles*, or aldermen, four deputies from the commons, with authority to vote, and two ſyndics, the one called procurador, and the other perſonero. This court is ſubordinate to the *acuerdo*, or œconomical court, which is compoſed of the two civil courts, aſſiſted by the regente de la real audiencia, and preſided over by the captain general of the province.

There are three colleges of eſcrivanos; the

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the firſt are called *eſcrivanos publicos*, or *eſcrivanos de numero*, who are ſcriveners to make contracts and wills. The ſecond are *eſcrivanos reales de la audiencia*, who are preſent in court to authenticate all tranſactions there; but who may, by ſpecial licence, make contracts alſo: of each of theſe the number is limited to forty. The third are improperly called eſcrivanos, being *procuradores*, that is, proctors, ſolicitors, attornies, or counſel, to ſolicit and to plead all cauſes in the courts of juſtice. In Catalan theſe are diſtinguiſhed by the name of *notarios reales cauſidicos*, and although by law they are limited to thirty, it is impoſſible to confine them to that number, becauſe of the multitude of cauſes which they have to plead. There are at preſent ſeventy-three of theſe, beſides one hundred and ninety-nine advocates.

The multitude of cauſes does not ariſe in Catalonia, as in Wales, from any violence of temper, or litigious ſpirit in the inhabitants, but from the uncertainty of its laws. They have a peculiar code, called, Conſtitutions of Catalonia; but this being inadequate to their wants, the next in force is

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the canon law; and, where that is ſilent, their ultimate reſort is to the Juſtinian code.

The proceſs is by written evidence, and the only parties viſible in court are the judges and the pleaders, with the *relatores*, or readers of that evidence authenticated by the eſcrivano, in whoſe preſence it was taken. For the aſſiſtance of the poor there is appointed a procurador, and alſo an abogado; the one to ſolicit, the other to plead their cauſes.

No hoſpital that I have ſeen upon the continent is ſo well adminiſtered as the general hoſpital of this city. It is peculiar in its attention to convaleſcents, for whom a ſeparate habitation is provided, that after they are diſmiſſed from the ſick wards as cured of their diſeaſes, they may have time to recruit their ſtrength, before they are turned out to endure their accuſtomed hardſhips, and to get their bread by labour. Nothing can be more uſeful, nothing more humane, than this appendage. The numbers they received into this hoſpital were, in the year 1785, nine thouſand two hundred and ninety-nine; and in 1786, ſix thouſand

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thouſand four hundred and eighty-eight. In the former year they buried eight hundred and fifty-four; in the latter, nine hundred and twenty-ſix; which, upon the average, is nearly a ninth of thoſe who enter; but then it muſt be conſidered, that many are put into public hoſpitals merely to ſave the expence of funerals.

With this hoſpital is united, under the ſame adminiſtration, an eſtabliſhment for foundlings, ſufficiently capacious for the city and its environs. The deſerted children were five hundred and twenty-eight, on the average of the two laſt years, and of theſe two-thirds were buried; a proportion ſhocking to humanity, but the inevitable conſequence of taking infants from the mother, and crowding them together in a city; more eſpecially if, as in Barcelona, five children hang upon one nurſe. It is much to be lamented, that they have not, like the French, recourſe to the milk of goats; or, like the nurſes of the Orphan Hoſpital in Dublin, learnt the uſe of ſucking bottles.

The boys on this foundation are bound apprentice when of a proper age; the girls,

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when marriageable, are conducted in proceſſion through the ſtreets, and any young man, who ſees one, whom he would chooſe for a wife, is at liberty to mark her, which he does by throwing his handkerchief.

Beſides theſe charitable foundations, there is in Barcelona an orphan hoſpital, which I did not viſit.

The inns are little inferior to thoſe of the great towns in France. The table is well ſerved, and ſupplied with plenty of good wine. The whole expence for lodging and board is only five livres French, or four ſhillings and two pence ſterling per day.

Barcelona may be conſidered as divided either into diſtricts or into pariſhes; the former being five, the latter eight, including the cathedral. In a circumference of four miles it contains at preſent ten thouſand two hundred and ſixty-ſeven houſes, and twenty thouſand one hundred and twenty-eight families, conſiſting of ninety-four thouſand eight hundred and eighty perſons.

The thriving condition of this city will appear

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appear by exhibiting at one view the ſtate of its population at different periods.

A. D. 1464,	the number of perſons was - -	40,000
1657,	- - - -	64,000
1715,	- - - -	37,000
1759,	in 13,917 families, -	69,585
1778,	in 16,608 ditto -	84,870
1786,	in 20,128 ditto -	94,880

The falling off, in 1715, may be readily accounted for, by recollecting, that during the war of the ſucceſſion, Barcelona was beſieged three times, and taken twice, firſt by the Engliſh, then by the French. In theſe convulſions the migration was great, and the aſſaſſinations were innumerable.

If the returns, which have been made to government, are compared with the parochial returns of births and burials, we ſhall be inclined to ſuſpect ſome inaccuracy in either one or both, unleſs we take into conſideration the numbers of prieſts, ſoldiers, monks, and nuns, which make theſe proportions differ from thoſe, which have been found in other countries. The births, on the average of the two years, 1785

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and 1786, were three thouſand nine hundred and ſixty-ſix; the burials four thouſand one hundred and ninety-eight; the deaths exceeding annually the births by two hundred and thirty-one. This circumſtance is not uncommon in great cities; but if we multiply the births by twenty-ſix, and the burials by thirty-ſix, and take the average between them, we ſhall have one hundred and twenty-ſeven thouſand and ninety-ſeven, which is thirty-two thouſand two hundred and ſeventeen beyond the returns to government. It muſt be confeſſed, that the people have an intereſt to conceal their numbers, in order to leſſen their contribution. This being the caſe, perhaps we ſhould come nearer to the truth, if we ſhould ſuppoſe the population of Barcelona, comprehending only thoſe who are ſettled in a family way, at more than a hundred thouſand ſouls. I ſhall however only ſtate them according to the government returns.

Settled in families - -	94,880
Secular prieſts, and ſervants of the church - -	912
In 19 convents of monks -	1,212

In

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In 18 convents of nuns, and 3 of beatas - -	654
In the general hoſpital, with foundlings - -	2,597
In the work-houſe - -	1,438
In priſons, and houſe of correction - - -	337
In ſanctuary at the cathedral, at preſent only - -	8
In garriſon, and military academy - - -	5,628
Officers of juſtice, and inquiſitors - - -	147
Clergy of St. Philip and others	157
Strangers on board of ſhips, and in the inns, &c. -	3,440
Total numbers in Barcelona -	111,410

This account of the population of Barcelona I have from D. Franciſco de Zamora, and it is confirmed by the captain-general; yet both acknowledge, that to obtain preciſion is almoſt impoſſible; and neither of them could give me the numbers confined in the priſons of the inquiſition.

The

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The wealth which flows into Barcelona is not confined within its walls, but helps to increaſe the population of all the ſurrounding villages, which, in the compaſs of five leagues, are one hundred and five, all ſubject to its juriſdiction, and all partaking of that tranquillity which ariſes from energy in a well conſtituted government.

The induſtry which every where appears in Catalonia ſeems to act with concentrated force in Barcelona. Early and late, not only is the hammer heard upon the anvil, but every artiſt is ſeen buſily employed, each in his ſeveral way adding to the general ſtock.

Two conſiderable trades in Barcelona are the taylors and the ſhoemakers, who are employed in clothing the army, not only in Spain, but over the whole empire. It is curious to obſerve, that as Scotland is remarkable for breeding gardeners, Ireland chairmen, Switzerland ſoldiers, ſo Catalonia is diſtinguiſhed all over Spain for ſhoemakers and taylors.

Amongſt the more conſiderable trades are the ſilk-weavers, cutlers, armourers and braziers, carpenters, cabinet-makers,

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turners, with fringe-makers and embroiderers. I was particularly ſtruck with the gun-ſmiths, who appear not only numerous and diligent, but uncommonly dexterous in the handling of their tools. The turners are more than dexterous, making one foot upon occaſion ſerve the office of a hand to guide the tool, or to fix the poppet-head. The carpenters work in a manner peculiar to this city. They have neither pit ſaw, hand ſaw, carpenter's adze, axe, nor hatchet. To ſlit a plank, they fix it in a vice and uſe a ſpring ſaw ſtrained by a bow, for working which they require two men. At this we need not wonder much; yet, when we ſee two men employed with the ſame tool, that is, with a tool of the ſame form, but finer, to make either dove-tail joints for cabinets, or tenants for doors and ſaſhes, we muſt be allowed to ſmile. If they wiſh to ſmooth a board, they let it incline upon two wooden treſſels, and hew it acroſs the grain with a cooper's adze, not reflecting than an elaſtic body cannot reſiſt the ſtroke. It is by no means neceſſary that a mechanic ſhould be able to explain the laws of motion, but what philoſophers acquire

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acquire by ſtudy, he ſhould learn by obſervation; and with him, experience ſhould ſupply the place of inſtinct, and ſuperſede the uſe of abſtract reaſoning.

The chocolate grinders have a method of working peculiar to Spain, and much preferable to that which is uſed in England. Our grinders, depending altogether on muſcular exertion, uſe only the muſcles of one arm, and employ thoſe muſcles to the greateſt diſadvantage; whereas in Barcelona, the ſlab, inſtead of being flat and horizontal, is curved, forming the ſegment of a hollow cylinder, and is inclined to the horizon. The operator kneeling behind this, and leaning over it with a granite roller, which is ſomething longer than the ſlab is wide, grinds the chocolate, uſing both his hands, and preſſing it with the weight of his body, as well as by the exertion of his arms. This operator goes from houſe to houſe, becauſe moſt families chooſe to have their chocolate ground at home. For the market they have a more expeditious method, and grind the chocolate much finer than it can be made by hand. For this purpoſe five rollers of po-

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liſhed ſteel, fixed in a frame, and appearing like the ſpokes of a wheel, or the radii of a circle, yet each turning round upon its axis, are placed between two mill ſtones, of which one is immoveable, whilſt the other with the rollers receives motion by communication, in common with two other mills of the ſame conſtruction, from a cog-wheel below ſtairs, which is turned in the uſual method by a mule. The nuts fall through hoppers to feed the mills. In this manner one man will grind three hundred weight of chocolate every day.

The manufacturers of ſilk, cotton, and wool, adopt all the modern improvements. It is now about a twelvemonth ſince M. Pontet brought to them from France a model of a machine for ſpinning cotton better than it can be ſpun by hand, ſomething like that which was invented by Mr. Arkwright. As this machine is well known in England, I ſhall not deſcribe it. They have here a company, eſtabliſhed by charter, for ſpinning American cotton to ſupply the manufactures, which uſed to take annually from Malta ſpun cotton to the amount of two hundred thouſand dollars,

or

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or about thirty thouſand pounds ſterling. This company enjoys many and valuable privileges. They have fourteen of the Manchester machines at work. As the cotton comes over foul, and full of ſand, they are obliged to prepare it before they can begin to work. This they do in a ſimple machine conſtructed for the purpoſe. They have a large lanthorn cylinder made with pantile laths, leaving half an inch between lath and lath. This cylinder is inclined to the plain of the horizon, and is immoveable. Within this they leave a portion of a cone, approaching in its form to the containing cylinder, turning on their common axis, and furniſhed with iron ſpikes of about five inches in length, placed in a ſpiral line, to correſpond with ſimilar ſpikes fixed within the cylinder, in order to teaſe and to cleanſe the cotton. The perſon who turns this machine with one hand, feeds it with the other. Government, diſpoſed to give every poſſible encouragement to this branch of manufacture, has granted to the Marquis de Gobert excluſive privileges for his blanket manufacture at Vicq, as a reward for his having planted cotton in the iſland of Ivica,

and

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and has offered premiums to thoſe who ſpin the greateſt length of thread from one ounce of cotton. For printing cottons they have the ſame ſlow proceſs, which was practiſed in England with ſtamps, previous to the uſe of cylinders.

The manufacture, which gave me the greateſt pleaſure, was one of woollen, carried on by Don Vincente Vernis. He employs three hundred and fifty perſons in making cloth for Spaniſh America, which indeed takes moſt of the Barcelona goods, except ſome ſilk ſmuggled with their brandy through Guernſey into England. He has a very compact and elegant machine for winding and twiſting worſted, in which fourſcore reels are managed by one little girl, whilſt another gives motion to the whole, and at the ſame time employs herſelf at knitting. This child, ſitting on a bench, treads a vertical wheel, which, by means of a wheel with cogs, fixed on the other end of the ſame axis, moves the horizontal wheel, and thereby turns the ſpindles. When one of the girls is weary the other takes her place.

The manufactures have increaſed with ſuch

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ſuch rapidity, that the wages of labour for all kinds of artiſts in the city and the environs have advanced to two piſtreens, or one ſhilling and eight-pence a day, for which they work only ſeven hours. The common labourer will earn fourteen pence in winter, but in harveſt twenty. Theſe gains, however, are not out of proportion to the value of proviſions, as regulated by the magiſtrate. Mutton is ſold for ten pence the pound of thirty-ſix ounces, beef for ſeven-pence, and bread at preſent for ſeven farthings the pound of twelve ounces; lodging for a ſmall family coſts about two guineas a year.

The mechanics here allow, that to maintain a family with tolerable comfort, their gains muſt be one hundred livres Catalan for each, which is nearly eleven pounds ſterling.

As fuel is not eaſily procured, they uſe the utmoſt frugality in dreſſing their little dinners, ſeldom indulging themſelves with either roaſt or boiled meat, but moſtly ſtewing it in pitchers over their fogon or little furnace.

Nothing can more diſtinctly mark the character

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character of this people and the rigid parſimony which accompanies the induſtry of Catalans, than a trade by which many contrive to obtain a maintenance for themſelves and for their families. This occupation is to make fogons, which they do for leſs than a penny ſterling each. Their manner of conſtructing them is ſomewhat ſingular. They take any bottomleſs pot, without enquiring for what uſe or purpoſe this pot has been before employed. They line it within, and cover the outſide with well-tempered clay; then, putting three iron bars in the bottom, and three knobs by way of feet, with three more to ſupport an olla or puchero, the whole is finiſhed; and in this behold the poor man's kitchen. The puchero is ſimply an earthen pitcher, in which the meat is ſtewed, and hence the common invitation to dinner, even in the houſes of wealthy citizens, is to partake of their puchero, or, as we ſay, to take pot luck.

The foundery for braſs cannon is magnificent, and worthy of inſpection. It is impoſſible any where to ſee either finer metal, or work executed in a neater and

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more perfect manner. Their method of boring was, in the preſent reign, introduced by Maritz, a Swiſs. Near two hundred, twenty four-pounders, are finiſhed every year, beſides mortars and field-pieces.

The ſtationers in Barcelona have a method of ruling books for merchants, than which nothing can be either more ſimple, expeditious, or exact. For this purpoſe they have a frame with bars, moveable in grooves, which are readily fixed at the diſtances required.

In every country a traveller can paſs through, he will find ſome mechanical contrivances, ſome modes of expediting work, which are of late invention, or at leaſt new to him; and I am inclined to think, that no country, if thoroughly examined, would furniſh more than Spain. This, however, I conclude, not only from thoſe tranſient obſervations, which I have had opportunities of making, but from thoſe of a moſt excellent mechanic, M. Betancourt, a Spaniard, who has ſought out ingenious artiſts in their garrets all over Europe, and who, I am perſuaded, not from national prejudice, but from intimate knowledge and

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and conviction, places his own countrymen among the foremoſt in fertility of imagination and mechanical invention.

The inſpection of their gun-locks gave me peculiar ſatisfaction. In thoſe which are made in England, the tumbler, unleſs caſe hardened, is apt to wear, and to go off upon the half cock; and even when executed in the moſt perfect manner, how many accidents have happened in going through a hedge; but in the Spaniſh gun-lock, the tumbler, if I may be allowed to call it ſuch, being of a different conſtruction, is free from theſe imperfections. I ſhall not here attempt any verbal deſcription of this excellent piece of mechaniſm, but hereafter I may, perhaps, engrave my drawings, and give them to the public.

The commerce of Barcelona is conſiderable, notwithſtanding the many impediments, natural and political, which have checked, and ſtill continue to reſtrain its progreſs. This city has no navigable river, and ſeems to have been built in its preſent ſituation only for the ſake of deriving protection from the high mountain, which commands it. The baſon is formed by a

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mole, and is ſufficiently capacious, but there is only twelve feet water on the bar. The quay is well conſtructed, but merchants are not permitted to land their goods immediately on it, leſt the boatmen ſhould want employment. All ſhips which are admitted to prattique, even though they ſhould be forced in by ſtorms, pay a duty, which is called *Lluda*; and, ſhould they be obliged to land the cargo; on reſhipping, they have oppreſſive duties to diſcharge.

The province is indebted to the Count Campomanes for the removal of the worſt impediment to manufactures, that ever was invented by the blind avarice of ſovereigns, at once to ſeize a revenue and to cut off the ſource, from which it ſhould ariſe. Although aboliſhed, the *Bolla* deſerves to be recorded for the honour of the king, who, from principles worthy to be adopted by all the governments in Europe, had the wiſdom to revoke it. Previous to the abolition of this vexatious tax, the weaver could not begin a piece of cloth, without ſending for the adminiſtrator of the bolla to affix his leaden mark, and when he had finiſhed it, he was to do the ſame. When

diſpoſed

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diſpoſed of, it was neceſſary to have another leaden ſeal, attended with a certificate; after which, when ſold by retail, the portion cut off was to be ſealed with wax, and the end of the piece, from whence this ſmall quantity had been taken, was to be ſealed again with lead. The tax was fifteen per cent.

We wonder at the ſtrange abſurdity of this impoſition; but, let our own government reflect, that the ſovereigns of Catalonia had not the monopoly of folly. Spain may with good reaſon ſay to England,

Cum tua pervideas oculis mala lippus inunctis,
Cur in amicorum vitiis tam cernis acutum.
HOR. SAT. lib. i. ſat. 3.

Brandy, wine, nuts, almonds, raiſins, and cork, are ſhipped at different places on the coaſt for the merchants, who reſide in Barcelona. The wines are Mataro, Villanova, Sitges, Valls, and Granatché. The price varies according to the ſeaſon, but when it is higheſt, we may reckon Mataro at ſixteen dollars, or forty-eight ſhillings, the hogſhead, including the Spaniſh duties; Villanova, fifteen dollars; Granatché, forty.

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All theſe are red. The following white wines are, Sitges, fifty-four; Valls, twenty dollars; but the common price is twelve dollars and an half per hogſhead for both the Mataro and Villanova.

When brandy is deareſt, it is ſold, duty free, on board, at 57 dollars, or £. 8. 11 *s.* the four cargas or pipe of 124 gallons Engliſh, Hollands proof, or 1 *s.* 4½. per gallon; but it is ſometimes ſold at 10 *d.* Of late conſiderable quantities of brandy have been embarked at Barceloneta, where they may be depoſited from the neighbouring country, without being liable to the heavy municipal duties levied at the gates of the city on proviſions of every kind, and from the impoſition of which, brandy is much dearer in Barcelona than in Guernſey.

Beſide the articles above enumerated, the merchants export wrought ſilks, printed cottons, woollen goods, ſmall arms, and ſpecie. This laſt is contraband. Catalonia furniſhes thirty-five thouſand pipes of brandy, and two thouſand of wine, beſides thirty thouſand bags of nuts, containing three buſhels each, at twenty ſhillings the bag. Of the above, about four thouſand

pipes

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pipes of brandy, and ſome ſilk, go to Guernſey and Alderney, and the reſt to France, all to be ſmuggled into England.

The cork bark, which makes a principal export of this province, was for a time prohibited, under the idle notion that the inhabitants might manufacture it at home; not reflecting that the Engliſh cutters could get a ſupply of cork in Portugal and France.

The imports are corn, fiſh, woollen goods, hardware, and oil of vitriol. The articles prohibited are beer, cyder, lead, hoſe, haberdaſhery, muſlins, and cottons; but of the two laſt, immenſe quantities are ſmuggled in.

Wine, entering the city, pays a town duty of fifty reals per carga of twenty-eight gallons. Wheat and barley, entering by ſea, pay, if for the public bake-houſe, one and an half per cent; if on a Spaniſh merchant's account, three per cent; and if on account of alien merchants, four and an half per cent. This duty was recovered formerly for the biſhop; but at preſent the

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king takes a part of it on his own account.

Cloth pays from one hundred twenty-ſeven to three hundred fifty-ſeven maravedis the vara.

Leather pays eighteen maravedis per pound. Hardware from thirty to fifty per cent; and fiſh, from thirty to ſeventy per cent. on the prime coſt. Wine exported pays five per cent. if on foreign bottoms, but if on Spaniſh, it is free. Nuts pay three ſols eight deniers per ſack. Of theſe, twenty thouſand are for the Engliſh market.

About one thouſand veſſels enter the port of Barcelona yearly, and of theſe one half are Spaniſh, one hundred Engliſh, one hundred and twenty French, and ſixty are Danes.

The confidence of Catalans on the interceſſion of the ſaints has at all periods been a ſource of conſolation to them, but upon ſome occaſions, has betrayed them into miſchief. Every company of artizans, and every ſhip which ſails, is under the immediate protection of ſome patron.

Folio

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Folio volumes teſtify the numberleſs miracles performed by our lady of Montſerrat, and every ſubordinate ſhrine is loaded with votive tablets. Were this perſuaſion of the kindneſs and power of departed ſaints productive only of gratitude and hope, it were cruelty to rob them of their treaſure; but, unhappily, it has been the parent of preſumption; and among the merchants has brought many wealthy families to want. The companies of inſurance in the laſt war, having each of them its favorite ſaint, ſuch as San Ramon de Peñaforte, la Virgen de la Merced, and others, aſſociated in form by the articles of partnerſhip, and named in every policy of inſurance, and having with the moſt ſcrupulous exactneſs allotted to them their correſpondent dividend, the ſame as to any other partner, they concluded, that with ſuch powerful aſſociates it was not poſſible for them to ſuffer loſs. Under this perſuaſion they ventured, about the year 1779, to inſure the French Weſt Indiamen at fifty per cent, when the Engliſh and the Dutch had refuſed to do it at any premium, and indeed when moſt of the ſhips were

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were already in the Engliſh ports. By this fatal ſtroke all the inſuring companies except two were ruined; yet, notwithſtanding their misfortune, this ſuperſtition remains in force.

In Catalonia as in France, with which this province was formerly connected, accounts are kept in livres, ſols, and deniers; twelve deniers make a ſol, and twenty ſols a livre. Thus far all is plain and eaſy; but when we are to reckon by the money of this province, nominal and real, nothing can be more perplexing. If we reckon the peſo or current dollar at three ſhillings ſterling, the hard dollar will be four, the current piſtole, twelve; and the piſtole of gold, fifteen ſhillings.

But for greater perſpicuity, I ſhall reduce them to a table, reminding the reader that in proportion as the exchange varies, additions or ſubtractions muſt be made.

CURRENT

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CURRENT COINS OF BARCELONA.

Maravedi of which 4 make a Quarto, 18 a ſol.
Half Quarto of 2 Maravedis.
Quarto of 4 Maravedis, worth $\frac{2}{7}$ of a penny ſterling.
Double Quarto, worth $\frac{4}{7}$ of a penny.
The above are of copper. Thoſe which follow are of ſilver.

Denomination.	Value in Quartos.	Value in Sols.	Deniers.	Value ſterling. £.	s.	d.
Quarter Piſtreen	$8\frac{1}{2}$	1	$10\frac{1}{2}$	0	0	$2\frac{3}{56}$
Half Piſtreen	17	3	9	0	0	$4\frac{23}{28}$
Piſtreen	34	7	6	0	0	$9\frac{9}{14}$
$\frac{1}{4}$ Pillar ditto	$10\frac{1}{2}$	2	4	0	0	3
$\frac{1}{2}$ Pillar ditto	21	4	8	0	0	6
Pillar Piſtreen	42	9	4	0	1	0
Double Piſtreen	68	15	0	0	1	$7\frac{2}{7}$
Peſo Duro, Hard Dollar	170	37	6	0	4	$0\frac{3}{14}$

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The GOLD COINS are,

		Liv. Sol. Den.	£. s. d.
Durillo, worth	5 Piſtreens	1 19 10	0 4 $3\frac{5}{6}$
$\frac{1}{2}$ Doblon new	10 ditto	3 15 0	0 8 $0\frac{2}{3}$
Doblon, ditto	20 ditto	7 10 0	0 16 $0\frac{5}{6}$
Double Doblon	40 ditto	15 0 0	1 12 $1\frac{5}{3}$
Doblon de a Ocho	80 ditto	30 0 0	3 4 $3\frac{1}{3}$
$\frac{1}{2}$ Doblon, old	10 and 3 d^s.	3 15 3	0 8 $0\frac{11}{12}$
Doblon, old	20 and 6 d^s.	7 10 6	0 16 $1\frac{5}{6}$
Double Doblon, ditto	40 1 1	15 1 0	4 12 3
Doblon de a Ocho, d^o.	80 2 6	30 2 0	3 4 6

The Piſtreen being reckoned at 4 Reals vellon, of $8\frac{1}{2}$ Quarts each all over Spain, except in Catalonia, where 4 Reals vellon are valued at only 7 ſols $5\frac{1}{4}$ deniers. Piſtreens brought from Spain into Catalonia, gain $\frac{5}{6}$ per cent.

THE

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THE IMAGINARY MONEY OF CATALONIA.

				£.	s.	d.
Denier		Deniers.				
Sol - -		12 -	-	0	0	$1\frac{2}{7}$
	Sols.					
Livre - -	20	-	-	0	2	$1\frac{5}{7}$
Real ardite -	2	-	-	0	0	$2\frac{4}{7}$
Peſo, cur^{t}. Dollar	28	-	-	0	3	0
Ducat - -	38	$7\frac{4}{17}$	-	0	4	$1\frac{301}{476}$
	Dollars.					
Current Piſtole -	4, or 112	0 -	-	0	12	0
Piſtole of gold -	5, or 140	-	-	0	15	0

Eight Deniers are equal to 3 Quartz, Spaniſh Money.

To reduce Peſos into Livres, multiply by ſeven, and divide by five; or add $\frac{2}{5}$ of the Peſos.

To reduce Livres into Peſos, multiply by five, and divide by ſeven.

MEASURES IN CATALONIA.

Twelve Cortans make one Quartera, which is two Buſhels, Engliſh meaſure.

Sixteen Cortans make a Carga of wine or brandy, which is about thirty Gallons Engliſh, and is reckoned to be twelve Arrobas.

One hundred Quarteras are reckoned equal to 128 Fanegas.

WEIGHTS.

Eight Ounces make a Marc, being $\frac{1}{6}$ heavier than in Caſtille.

Twelve Ounces make a Pound.

Twenty-ſix Pounds one Arroba.

Four Arrobas one Quintal, which is ninety-three Pounds Engliſh, or ninety-one Pounds Caſtillian.

One hundred and twenty-five Pounds make one hundred and twelve Pounds Engliſh.

The

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The building of Barcelona, according to hiſtorians, was about two hundred and thirty years prior to the chriſtian era, and three hundred ſubſequent to the firſt eſtabliſhment of the Carthaginians in Spain. It is ſaid to have been called Barkino by its founder, in honour of his family, and to have derived from the Jews the commercial ſpirit which it has conſtantly retained.

It has ſeen many revolutions, and ſuffered much by every change. It was early delivered from the dominion
A. D. 805. of the Moors, and raiſed into a county, paying homage to the kings of France, till they, unable to protect it, reſigned their claims, leaving
A. D. 874. the citizens to their own exertions for the vindication of their freedom. From this time their ſtruggles, for more than a century, were inceſſant with the Moors; but in the end, the
A. D. 994. creſcent yielded to the croſs, and for many generations Barcelona was independent on its neighbours. Towards the cloſe of the twelfth century it was annexed, by the marriage of its count, to the crown of Arragon; and, at a ſubſequent period,

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period, by the union of Ferdinand and Iſabella, it became a part of the Spaniſh monarchy.

Whilſt the ſucceſſion was diſputed between the two houſes of Auſtria and Bourbon, on the death of Charles II. of Spain, this city was A.D. 1700. of too much importance to the contending powers, to remain long in the quiet poſſeſſion of either. The French were maſters of the city, when the earl of Peterborough arrived upon the coaſt with his little army, a force too inconſiderable to attempt a ſiege with any proſpect of ſucceſs. But as this gallant officer had that, which ſupplies the want of more numerous armies, an imagination fertile in reſources, his friends never gave up their hopes of ſucceſs, till they ſaw him re-embark his troops, and prepare for ſailing. The moment of deſpair to them was to the beſieged the reviving of their confidence; and his departure was the ſignal of feſtivity to thoſe, who had never been free from apprehenſions, whilſt he remained before the city. He ſailed; but in the night he diſembarked his troops, and before the morning he got poſſeſſion of Mon-

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jouch. After a few days more he was maſter of the city. In this arduous undertaking he was well ſupported by brigadier Stanhope and Mr. Methuen, whoſe prudence, fidelity, and valour procured for them thoſe honours, which they have tranſmitted to their families.

Gerona, Tarragona, Tortoſa, and Lerida, followed the example of the capital, and declared for Charles. Wherever the earl of Peterborough turned his arms, victory declared for him. It was ſufficient for him to ſhew himſelf, and every city offered him its keys. Whilſt he was in Valencia, the enemy laid ſiege to Barcelona; but he haſtened to its relief, and compelled them to retire, not only from before the city, but out of the province, although he had only a few troops, and they had thirty thouſand men. When he was ſuperſeded, a ſeries of miſfortunes too well known haſtened the fall of the arch-duke's dominions; and the citizens of Barcelona, after an obſtinate reſiſtance, opening their gates to Philip, ſubmitted, though reluctantly, to bear the yoke.

May 1, 1706.

A ſpa-

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A ſpacious and airy walk round the walls, with the incloſed gardens, contributes towards making Barcelona one of the moſt delightful cities in the world. No one, who has been there in the ſpring, will be every weary of expatiating on the pleaſures he enjoyed.

It is ſituated in a plain, open to the ſouth eaſt, but protected from the weſt by Monjuich, and from the north by a chain of mountains which are terminated to the weſt by Mont S. Pedro Martyr. The ſoil, from ſix to ten feet deep, is clay.

In this plain, near to the city, is a little ſtream, which, in ſummer, ſerves for watering the country; but to the weſtward, beyond Monjuich, is the Lobregat, the largeſt river between the Ter, which runs by Gerona, and the Segre, which, riſing in the Pyrenees, empties itſelf into the Ebro.

One of the mountains oppoſite to the city, called S. Jeronimo, is famous for its convent, but more eſpecially for the gardens, which are ſpacious, ſhady and well-watered. At the bottom of the hill is a quarry, in which the ſtone evidently contains much calcareous matter. Higher up is granite of a

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looſe texture, crumbling and decompoſing, whilſt the middle and the top to the ſouth, and hanging to the ſea, is altogether ſchiſt; but beyond the ſummit, deſcending to the north, there is only granite. We muſt always remember, that in the natural ſituation the granite is covered by ſchiſt, and the ſchiſt by calcareous rock. From this elevated ſpot Montſerrat appears magnificent, and ſeems to be within two hours walk. The proſpect every way is pleaſing and extenſive.

On the ſides of this mountain they have quarries of limeſtone and marble.

My diſtant excurſions were reſerved for holidays, when the conſul was at leiſure to go with me. In one of theſe we viſited Mont S. Pedro Martyr, from which you command a more extenſive proſpect than from S. Jeronimo. To the north of this ſtands Montſerrat, and beyond it the Pyrenees appear ſinking in the horizon, and looking only like a wall of ſnow. Turning to the ſouth and to the eaſt, we ſee the whole extent of the rich vale which ſupplies the city, and the numerous adjacent villages; and beyond this, the Mediterranean, bound-

ing

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ing the diſtant view. To the Weſtward flows the Lobregat, deſcending through the gorges of the mountains, from which it receives innumerable torrents, and having ſpent its fury, moves on ſlowly to the ſea, winding its meandering courſe through the extended plain, which itſelf has formed.

The baſe and body of this mountain is granite; but as you riſe towards the ſummit, you find the proper covering of ſchiſt breaking into thin white flakes, and, with the vitriolic acid, forming alum. It is evidently from the diſſolution of the ſchiſt, which every where abounds on the tops of theſe high mountains, that the ſubjacent plain is covered to ſo great a depth with clay, not merely with ſuch as the brick-makers prefer, obſtinate and ſterile, but ſuch as, by the mixture of calcareous matter and of ſand, approaching to a marle, is eaſily broken by the plough, and bears the moſt luxuriant crops.

Theſe mountains are cultivated, and where the plough cannot go, even to their ſummits, they are covered with vines.

Here, for the firſt time in Spain, I found

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the *quercus coccifera*, which bears the kermes; but on theſe no traces of that little animal appear.

We dined at a country houſe belonging to the Dominicans, to which thoſe fathers go when they wiſh to breathe a purer air, or to retire for a ſeaſon from the reſtraints of the monaſtic order. Here they have a hall of near ſixty feet, many good bedrooms, and a gallery of ninety feet in length by eighteen wide, open to the eaſt and to the ſouth, commanding at once the plain, the mountains, and the ſea, with the city, ſome villages, a few convents, and numberleſs farm-houſes ſcattered in the valley. Above and below them, on the declivities, are ſtretched their vineyards, furniſhing them with raiſins and excellent wine. They received us with hoſpitality, and had we been inclined to ſtay, they would have given us beds. Here we remained until the ſetting ſun reminded us that we muſt mount our horſes and return.

I have ſeldom quitted any ſpot with more regret; and had I not ſoon after left Barcelona, I ſhould have choſen this for

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for my retreat, in which, with the aſſiſtance of a father, I might have learned the Spaniſh language.

Having ſurveyed theſe elevated regions, which bound the proſpect to the north, I was deſirous of inveſtigating with more minute attention the nature of Monjuich, which, hanging over the ſea, commands the city to the weſt. For this purpoſe I walked upon the beach, clambered on the cliffs among the rocks, and either on horſe-back or on foot I croſſed its ſummit in all directions, that I might examine it in every part. The baſe and body of this mountain is ſandſtone, or ſilicious grit, of a fine grain, and either white, red, or gray, with ſome little ſprinkling of mica. The ſummit, in ſome places, does not differ from the baſe, but in others it is covered with pudding ſtone, with ſchiſt, with clay, or with fuller's earth; and, which is moſt worthy of attention, both the ſchiſt and the clay carry foſſil ſhells.

If I might venture to hazard a conjecture, ſupported by theſe facts, and by others ſimilar to theſe, I ſhould be much inclined to think that this whole mountain

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is a depoſit, and that the grit is only the decompoſed granite either of thoſe mountains, of which I have given the deſcription, and which is of three ſpecies, white, red, and gray, or elſe of ſome other mountains, which exiſt no more.

This ſubject will be reſumed when I come to treat of the environs of Salamanca; and I hope that the theory here delivered will then not only be confirmed, but help to throw a light upon ſome parts of natural hiſtory, which are now obſcure.

If my conjecture be well founded, Monjuich muſt not merely have been covered with the ſea, and this fact is beyond a doubt, but it muſt have been relatively lower, and much lower than the granite mountains by whoſe ſpoils it was compoſed, being accumulated at the conflux of two or more currents, as we ſee in miniature in torrents, or at the junction of two ſtreams. Whoever is well acquainted with the external appearance, and with the internal ſtructure of the country near Southampton, will ſee a ſtriking example of this accumulation, not from matter brought by either of its rivers, for their beds are

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too low for ſuch an operation, but by the action of currents, when the ſurrounding hills of Suſſex, Wiltſhire, Dorſetſhire, and the iſle of Wight, were under the ſurface of the ſea, as we muſt conclude from the foſſil ſhells found in the chalk on every one of theſe hills.

From Monjuich we look down on the extenſive plain formed by the Lobregat, which appears fertile, but by no means inviting, becauſe every thing in it has a gloomy aſpect, and the inhabitants have all the tokens either of agues, of dropſy, or of jaundice.

The fortifications on this mountain are reckoned perfect in their kind; they are highly finiſhed, and for beauty do credit to the nation. Theſe, in addition to the ſtrong works round the city, and the citadel, muſt render Barcelona untenable by an enemy.

The appellation of Monjuich has never been properly explained. They anciently wrote Monjouy, but the pronunciation is Monjuique, which may poſſibly mean mountain of the Jews. Certain it is, that the Jews were numerous in this part of

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Spain, and that on the hill loooking towards the city there are monumental inſcriptions on large hewn rocks in Hebrew characters. Many of the words are ſcarcely legible, but by thoſe, which can be read, that ſpot appears to have been the burying place of the Jews.

The country around Barcelona is well cultivated, and abounds with vines, figs, olives, oranges, ſilk; flax, hemp, algarrobo fruit, wheat, barley, oats, rye, beans, peas, vetches, Indian corn, millet, with all kinds of lettuce, cabbages, colliflowers, and other vegetables for the ſervice of the kitchen.

To plough their land they uſe only two oxen, or one ſtrong mule, and no boy to drive. Their plough is light, and well contrived: the beam is long, and fixed to the yoke, if they have two oxen; or if they uſe one mule, they fix it to the collar by ſhafts. For ſtirring they uſe no coulter, fin, nor mould-board; but in its ſtead two ears. For breaking up their land, and when the ſoil is ſtiff, they drop the ears, and take coulter, fin, and mould-board, which they put on or off in three minutes time. They

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have two methods of ſetting the plough up or down, ſo as to go deeper or ſhallower at pleaſure, notwithſtanding the greateſt variety in the tenacity of the ſoil. At the extremity of the beam there are three holes, about four inches apart, and by one or other of theſe they fix it to the yoke. If they want to ſet the plough deeper into the ground, they put the pin through the furtheſt hole, neareſt to the extremity or point of the beam; but when they want the plough to go more ſhallow, they put the pin through the hole which is furtheſt from the point. When the land is ſo ſtiff, that they cannot by theſe means keep the plough ſhallow enough, they have an eaſy method to ſink the beam, or in other words, to raiſe the point of the ſhare, which a ſight of my drawings will explain.

It is impoſſible to pay more attention to the conſtruction and uſe of ploughs, for all the different purpoſes of huſbandry, than they pay to this important ſubject in the country about Barcelona. The harrows have iron furniture. As for rollers, they are not to be expected where wood is ſo very ſcarce.

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ſcarce. To break the clods they uſe a board, on which a boy ſtanding drives the mule. Their hoe is almoſt as wide and as heavy as our ſpades, but ſet in ſuch a manner as to form an angle of about thirty degrees with the handle, ſo that a man muſt ſtoop very low to uſe it. For my part I ſhould prefer a ſpade; but this, perhaps, may be the prejudice of education.

The noria muſt be conſidered as one of their implements in huſbandry. It is here conſtructed ſomewhat differently from that which I have before deſcribed. The noria of Barcelona is the original chain pump, or at leaſt its parent, as having ſuggeſted the idea on which the chain pump is formed, and from its ſimplicity appears to have derived its origin from the moſt remote antiquity. It conſiſts of a band or girdle, paſſing over a ſprocket wheel, long enough to reach eighteen inches, or two feet below the ſurface of water in a well. All round this band, at the diſtance of about fifteen inches, are fixed jars of earthen ware, which, as it turns, take up water from the well, and pour it into a ciſtern fitted to receive it. A little aſs

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going round his walk, with eaſe turns a trundle, which gives motion to a cog-wheel fixed on the ſame axis with the wheel on which the band is hung, and with which it turns, thus producing a conſtant and conſiderable ſupply of water at a ſmall expence, and with very little friction. As the air would obſtuct the entrance of water into theſe jars or bottles, each jar has a little orifice in its bottom, through which the air eſcapes, but then water follows it, and a certain quantity falls back into the well. It is true, as the jars riſe in one ſtrait line, the water which runs out of the ſuperior jar is caught by that which is immediately below it; yet ſtill there is a loſs; and beſides this inconvenience, the whole quantity is raiſed higher than the reſervoir, at leaſt by the diameter of the ſprocket wheel, becauſe it is only in their deſcent that the jars are emptied. The chain pump boaſts undoubtedly many and great advantages over this machine; yet the chain pump itſelf is not free from imperfections. If the valves are not well fitted to the cylinder through which they move, much water will fall back; if they

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are well fitted, the friction of many valves muſt be conſiderable, beſides the friction of the chain round the ſprocket wheels, and of the wheels themſelves. Chain pumps require a great number of men to work them, not in the open air, but under deck, where the heat is great, and the fatigue inſufferable. The preference, therefore, which has been given to chain pumps over thoſe which work by the preſſure of the atmoſphere, muſt have ariſen from this one circumſtance, that they have been found leſs liable to choke.

In point of friction, of coolneſs, and of cheapneſs, the ſucking pump has ſo evidently the advantage over the chain pump, that it will not fail to gain the preference, whenever it ſhall be no longer liable to be choked with gravel, and with chips. Many and various have been the expedients thought of by mechanics to improve this pump; the one which caught attention and was adopted in our navy has, upon trial, been found defective. This was, inſtead of common valves with joints, to have cylinders with holes in the ſides, but cloſed at top, moving in braſs boxes, and known by

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by the name of caniſter valves. Theſe have been found of all others the moſt liable to jam, and to become immovable by the introduction of ſand between the caniſter and box. For this the public is indebted to Mr. Cole, who having acquired fame by executing the improvements of the chain pump invented by Captain Bentinck, readily obtained the credit, which was by no means due to him, for more than common ingenuity in this invention of his own. In the model, and with clean water, his experiments ſucceeded, and gained the approbation of the admiralty board, who immediately gave orders for their introduction in our ſhips of war. To this haſty approbation has been attributed the loſs of the Centaur, and of ſome other ſhips returning with her from the Weſt Indies. It is, indeed, impoſſible to ſay how many ſhips have periſhed in conſequence of this change in the conſtruction of our pumps, as the moſt fatal accident which can happen to a veſſel under the preſſure of a ſtorm is the choking of her pumps. The admiralty board can never be too cautious in the examination of improvements,

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provements, nor too much upon their guard how they give credit to certificates in favour of any, which they have ordered to be tried. In the new edition of Chambers's Dictionary, lately given to the public by Doctor Rees, we have a deſcription of Captain Bentinck's chain pump, the excellence of which will never be called in queſtion; whilſt credulity itſelf can by no means find it eaſy to believe the report of experiments tried on board the Seaford frigate, and ſigned by Rear Admiral Sir John Moore, twelve captains, and eleven lieutenants of his Majeſty's navy. It is ſtated, that with the old chain pump ſeven men were ſeventy-ſix ſeconds raiſing one tun of water, whereas with the new pump two men raiſed the ſame quantity in fifty-five. Had Sir Thomas Slade, who was then ſurveyor of the navy, and Captain Bentinck, been upon better terms; this report had certainly been drawn up in a manner more agreeable to truth; or at leaſt the experiments would have been conducted with that degree of caution, which would have done more credit to the integrity of thoſe, who were to ſign, and to the underſtanding

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ſtanding of thoſe who were to receive the report. Notwithſtanding the acknowledged and moſt undoubted ſuperiority of the new pump over that, which had been previouſly uſed, it muſt have been evident to every one competent to judge between them, that this trial was not conducted fairly.

The imperfection of ſucking pumps is prevented by a late improvement, which bids fair for univerſal approbation. Mr. Taylor, of Southampton, the ſame gentleman to whom not only England but all Europe is indebted for blocks, which, by long experience, have been found perfect both in point of ſtrength and of prompt obedience; at the requeſt of ſome naval gentlemen, applied himſelf to the conſideration of this matter, and ſoon found a remedy, which, in all probability, will bring this pump nearer to perfection than any which has been hitherto employed. He began with taking away the lower valve, together with its box, and in its place he ſubſtituted a ball, falling down into a part of the ſame chamber, in which the upper piſton works, contracted for that purpoſe; but as it was not eaſily extracted, inſtead

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inſtead of this, he took the ſegment of a ſphere, and in its centre he riveted a pendulum. By this ſimple contrivance, the chips and gravel paſs without inconvenience, and the pendulum valve falls back into its place. Nothing can be more promiſing in its appearance; it remains for time and for experience to confirm the judgment, which has been formed of this improvement.

At Barcelona, ſome gentlemen who excel in mechanical invention, ſenſible of the peculiar imperfections of the noria, have ſtudied how to avoid theſe in a machine which they have conſtructed, and which is not altogether void of merit. The beam, to which the traces of the horſe are fixed, is near eight feet long; the diameter of the horſe-walk is ſixteen feet; and that of the horizontal lantern or trundle is near four feet. A vertical wheel, moved by this, is of the ſame diameter, and gives motion to a vertical lantern or trundle of two feet ſeven inches, and thereby to a water wheel of ten feet and an half diameter. The movements in this machine are too complicated, and thereby both

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both the expence and the friction are increaſed. Beſides this, the horſe walk is too ſmall, and the beam being behind the horſe, inſtead of being placed over his ſhoulders, the line of draught makes with it an angle of forty-five degrees, and thereby one half of his force is loſt. Theſe miſtakes are not uncommon, and for that reaſon only they are mentioned in this place. That which fixed my attention, was the conſtruction of the water-wheel. It is a cylinder divided into two portions by a ſeptum parallel to its ſides. In each portion there are chambers formed by four partitions, which make a ſquare whoſe angles touch the circumference of the wheel, ſo that each chamber is the ſegment of a cylinder. The partitions on one ſide of the ſeptum are not parallel to thoſe on the other ſide, but are placed in a different direction, ſo that when, of thoſe which are on one ſide, two are perpendicular, thoſe on the other ſide make an angle of forty-five degrees with the horizon. In each of theſe chambers there is an opening to receive the water of one quarter of the arch. A leather collar embraces the wheel, where

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it diſcharges the water, to prevent waſte. The peculiar excellence of this wheel is, that no water is loſt after it has been received into the chambers; but then with all this machinery the water is raiſed leſs than eight feet high. Round all the reſervoirs they conſtruct a parapet wall for waſhing linen, as I have deſcribed already.

For hemp they have a machine ſimilar in its form to that, which is uſed in all our ſugar iſlands for bruiſing canes, but differing in its materials, and in the poſition of the whole. Here they place the three fluted rollers, made of oak, one above the other, cauſing them to act upon the hemp as it paſſes between them, not only by their weight, but by the preſſure of two ſtrong ſprings. A mule turns a wheel, which giving motion to the loweſt cylinder, makes the uppermoſt revolve in a direction oppoſite to its own; and as behind them there is the ſection of a drum, or hollow cylinder, to ſtop the hemp, and direct it in its return, that which has paſſed between the uppermoſt and the middle roller comes back bruiſed between the middle and under rollers.

The

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The common courſe of huſbandry about Barcelona begins with wheat; which, being ripe in June, is immediately ſucceeded by Indian corn, hemp, millet, cabbage, kidney beans, or lettuce. The ſecond year theſe ſame crops ſucceed each other as before. The next year they take barley, beans, or vetches, which coming off the ground before midſummer, are followed, as in the former years, by other crops, only changing them according to the ſeaſon, ſo as to have on the ſame ſpot the greateſt poſſible variety.

The common produce of wheat is ten for one, but in the rainy ſeaſons they get fifteen. All theſe crops are watered, when water is to be had, either by ſome ſpring or by the noria.

April 24, they were ploughing for hemp, which they expected to cut the middle of July; after which, they propoſed to put in turneps, parſnips, and lettuce, for the autumnal market. The land will bear flax, but they find hemp more profitable.

I was much ſtruck with their mode of filling the dung cart. For this purpoſe, they have three men, one in the cart, one

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on the heap, and one between them to carry the little baſket, after the latter with his three pronged fork has filled it. They ſmiled at my ſimplicity in thinking, that if all had prongs the cart would be filled much quicker; and it is only for expedition that they have hit upon this method.

In the country, at ſome diſtance from the city, they pay for wages in huſbandry, from ten pence to one ſhilling ſterling a day for men, and half as much for women; but carpenters will get ſixteen pence, and maſons two ſhillings.

The rigid parſimony of Catalans appears in their ſcanty proviſion for the day. When they carry their little baſket to the market, together with their beef and garden ſtuff, they bring home two deniers worth of charcoal. This circumſtance is ſo characteriſtic, that when they would reproach the rich miſer for his penury, they ſay that notwithſtanding his opulence he ſtill continues to ſend to market for *dos dineros de Carbon*. Twelve déniers make a penny.

Their dreſs is ſingular. They have red night-

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night-caps over a black net which receives the hair, and hangs low down upon their backs. Their waiſtcoat or ſhort jacket, with ſilver buttons, is cloſe, and bound with a long ſilk ſaſh, paſſing many times round their loins, and then tucked in.

In Spain, Italy, and Africa, all the inhabitants bind themſelves up with ſaſhes, as a preventative of ruptures. Certain it is, that theſe are very common; but when we conſider, that the nations, who uſe no ſaſhes, are not much ſubject to ruptures, we may perhaps be led to attribute this accident to relaxation, which muſt be promoted by the very precaution adopted to prevent it.

Their breeches are commonly black velvet; they have ſeldom any ſtockings, and ſandals ſupply the place of ſhoes.

No people upon earth are more patient of fatigue, or, travelling on foot, can outſtrip them. Their common journey is forty miles, but upon occaſion they will run threeſcore. For this reaſon they make good guides and muleteers; being employed as ſuch all over Spain, and truſted

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without reſerve, on account of their integrity.

The environs of Barcelona are friendly to botanical purſuits, and the city is not deſtitute of ſome, who cultivate this ſcience. I received much aſſiſtance from Don Ignatio Ameller, an apothecary, whoſe library would do honour to the firſt botaniſt in Europe. To him I frequently recurred, and found him converſant with the beſt authors, who had written on this ſubject. There is alſo a young man, whoſe employment is to collect medical plants for the apothecaries. In him I found an excellent diſciple of Linneus, and collected from his hortus ſiccus ſuch plants as I had not met with in my walks, all arranged according to their claſſes. Among theſe I found the following: Canna; Salicornia: Blitum; Valeriana; Veronica, both the vulgaris and the becabunga; Syringa; Liguſtrum; Olea; Phillyrea fl. lut; Roſmarinus; Salvia of ſeveral ſpecies; Jaſminum; Gratiola; Pinguicula; Verbena; Lycopus; Juſticia; Crocus ſativus; Nardus montana; Ixia; Gladiolus communis; Iris vulg. flor. Ceruleo,

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Ceruleo, & paluſtris fl. luteo & fætidiſſima, with the Iris bulboſa flore variegante; Cyperus rotundus; Plalaris; Arundo; Gramen officin. dactylis; Holoſteum; Scabioſa vulg.; Scabioſa ſpecias; Globularia Dipſacus ſilv. Galium; Gallium luteum & album; Rubia tinctorum; Crucianella; Plantago major vulg.; Coronopus vulg.; Pſyllium; Pimpinella; Cornus; Alchemilla; Cuſcuta; Potamogeton; Ilex; Heliotropon; Myoſotis; Lithoſpermum; Anchuſa; Bugloſſa vulg.; Cynogloſſum vulgare; Onoſma; Echium; Aſperugo; Conſolida major; Pulmonaria maculata; Borago hortenſis; Cortuſa; Primula veris & Auricula; Verbaſcum; Campanula; Convolvulus marinus; Scammonea; Polemonium; Cyclaminus; Anagallis fl. rub.; Lyſimachia fl. lut.; Lonicera; Ribes; Coris; Phyſallis; Atropa Hyoſcyamus; Capſacum; Mirabilis; Datura; Solanum; Glycypitros; Lycoperſicon; Melongena; Rhamnus; Frangula; Euonimus; Nerium; Vinca; Aſclepias; Salſola; Ulmus; Herniaria; Gentiana major; Centaurum minus; Echinophora; Eryngium; Sanicula; Bupleurum; Daucus; Caucalis; Ammi;

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mi; Bunium; Conium; Apium; Athamanta; Crithmum; Lacerpitum; Sphondylium; Liguſticum; Imperatorium; Angelica; Cuminum; Smyrnium; Thapſia; Anethum; Ferula; Sium; Oenanthe; Coriandrum; Chœrophyllum; Carum Scandia; Rhus; Tinus; Sambucus; Parnaſſia; Linum; Droſera; Statice; Lilium cand.; Lilium fl. nutante hemerocallis; Lilium fl. nut. martagons fl. purp. Lilium radice aſphodeli; Pancratium; Amaryllis; Allium ſylveſtre; Porrum; Cepa alba; Leucojum bulboſum; Ornithogalum fl. lutea; Narciſſus; Scilla; Tulipa; Aſphodelus; Lilium Conval; Hyacinthus fl. cerul; Corona imperialis; Fritillaria; Erythronium; Aſparagus; Juncus; Tradeſcanſia; Aloe; Berberis; Lapathum acutum; Rumex; Colchicum; Aliſma; Æſculus; Tropœolum; Epilobium; Ænothera Daphne; Polygonium; Fagopyrum; Biſtorta; Perſicaria; Herba Paris; Laurus nobilis; Rheum; Butomus; Senna; Caſſia; Dictamnus fraxinella; Ruta; Tribulus; Melia; Arbutus uva urſi; Rhododendrum; Pyrola; Saponaria; Saxifraga; Dianthus; Cucubalus; Arenaria; Stellaria; Sedum; Lychnis; Oxalis; Tridactylus;

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dactylus; Phytolacea; Aſarum; Peganum; Portulaca; Lythrum; Agrimonia; Reſeda; Euphorbia; Tithymalus pinea; Sempervivum; Cactus opuntia; Cactus ſcandens; Philadelphus; Piſidium; Myrtus; Punica granatorum; Ceraſus; Amygdalus; Crategus; Sorbus; Malus; Pyrus; Oxyacantha; Meſpilus; Ulmaria; Filipendula; Roſa; Rubus; Fragraria; Tormentilla; Quinquefolium; Geum.

The Algarrobo (ceratonia edulis) near the ſea, and to the ſouth, is one of their moſt profitable trees; tender, yet requiring no attention; beautiful in its foliage; luxuriant; and commonly loaded with fruit, which is given to their cattle; not only to thoſe which work, but to their oxen, when they are to be fatted for the ſhambles. The pod is long, and contains many ſeeds, abounding with ſaccharine matter. It is exceedingly pleaſant and nutricious. It is ever green.

Barcelona, as a reſidence, is not only delightful, but healthy. There are indeed ſome days when all the inhabitants, but more eſpecially ſtrangers, are inclined to think it both unhealthy and unpleaſant; that

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that is, when the eaſt wind brings in the fog, which for many days before had been obſerved ſtanding off at ſea, as if watching and waiting for an opportunity to land. The pores are then locked up, and the temper becomes ſo irritable, that the beſt friends muſt be careful how they meet. But no ſooner does the land breeze ſpring up, than the fog retires, the ſun breaks out, and all nature wears a ſmile. In Barcelonetta, and the citadel, in which a garriſon of five thouſand five hundred men is quartered, intermittents never ceaſe to rage, and to bring on in winter, dropſies and jaundice, and in ſummer malignant fevers. The ſame diſeaſes reign beyond Monjuich, in the low country watered by the Lobregat; but although the prevailing wind in its paſſage becomes loaded with miaſmata, yet, being diverted from its courſe by that high mountain, it has no baleful influence on Barcelona.

JOURNEY

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JOURNEY

FROM

BARCELONA TO MADRID.

WHEN I had nearly ſatisfied my curioſity, and had ſeen almoſt every thing worthy of attention, I began to think how I was to proceed in my tour through Spain. Not having as yet acquired the language, I was by no means qualified to travel alone; but as my intention was to go directly for Madrid, I was informed, that in the courſe of a few days ſome opportunity would offer to join with three others in the hire of a coach. In the mean time I continued my excurſions in the country, and viſited again thoſe places which had ſtruck me moſt.

At length having made a party with three officers in the Spaniſh ſervice, two of them

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them natives, the third a Frenchman, who were all going to Madrid, we hired a good coach with ſeven mules, and left Barcelona on Saturday, *May* 6, in the afternoon. That evening we travelled five leagues on the banks of the Lobregat, and lay at Martorel. This place is famous for Hannibal's bridge, with its triumphal arch. I ſhould have been happy, had the time permitted, to have made a drawing of theſe venerable remains, with the high mountain which riſes near them, to the eaſt, and Montſerrat, which is ſeen at the diſtance of three leagues, hiding its lofty ſummit in the clouds.

Martorel is one long narrow ſtreet, in which poverty, induſtry, and filth, although ſeldom ſeen together, have agreed to take up their abode. The inhabitants make lace, and even the little children of three and four years old, are engaged in this employment.

The next morning we came to Piera, at the foot of Montſerrat, no longer appearing like a ſugar loaf, but rather like a ſaw, riſing almoſt perpendicular, and lifting up its rugged rocks like pyramids to meet the clouds.

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clouds. Of all the countries I have ſeen, few have ever ſtruck me like this in the vicinity of Montſerrat.

The mountain is calcareous; but that which is moſt remarkable is, that the whole is pudding ſtone, compoſed of lime-ſtone gravel, formed into one hard maſs by a calcareous cement, and yet of ſuch ſtupendous height, that from its craggy ſummit are ſeen the iſlands of Majorca and Minorca, at the diſtance of fifty leagues. On the ſame mountain are found rocks of grit, or ſand ſtone; and, according to Bowles, the lapis lidius is no ſtranger there. All the country near this ſurpriſing mountain would, if it were more diſtant, appear mountainous. It is every where torn by deep ravins, laid open to the depth of one hundred and twenty feet, and appears to be compoſed of broken ſchiſt, with clay and ſand. The rocks, which here and there peep through the ſoil, are evidently tumblers from Montſerrat, and ſerve to ſhew the nature of that mountain.

This ſingular phænomenon is rendered more remarkable by a ſtupendous mountain in its vicinity, deſcribed by Bowles; a moun-

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a mountain of three miles in circumference; near the village of Cardona, which is one maſs of ſalt; and equal in height to thoſe of the Pyrenees, on which it borders. In a climate like our own ſuch a maſs had long ſince been diſſolved, but in Spain, they employ this rock ſalt as in Derbyſhire they do the fluor ſpar, to make ſnuff-boxes and vaſes, with other ornaments and trinkets. I carried a little fragment with me all through Spain, without the leaſt ſign of deliqueſcence; but when I came to England, I ſoon found it ſurrounded with a pool of water.

I ſhall not at preſent make any obſervations on the formation of theſe mountains; yet one circumſtance I would wiſh to be remembered in the rocks of Montſerrat, which is, that in ſome of the ſtrata the gravel is ſmooth and rounded, like that which is found upon the ſea beech.

After having travelled many leagues, with Montſerrat conſtantly on our right, and riſing above us like a wave when it is prepared to burſt, we began to increaſe our diſtance from its baſe, and winding to the left, deſcended among the mountains which

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which border on the Noya, and which are compoſed of white granite. The ravins here are wider and deeper than thoſe which we had ſeen the day before, and leave no room to doubt in what manner mountains acquire their form. But whoever travels through this country, and ſees how nature has been convulſed, muſt look for ſome more powerful agent to account for the phænomena than water and the moſt raging torrents.

Having croſſed the Noya, and keeping along its banks for about half a mile, through a narrow paſs, with the river on our right; we had on our left, cliffs riſing perpendicular to the height of near two hundred feet, compoſed of calcareous incruſtations, by the French called tuf, incloſing ſnails and leaves, like that which is between Montpellier and Montferrier. It had happened opportunely, that as we were deſcending to the river, the coach was overturned, which gave me time to walk forwards, and not only to examine, but to make a drawing of the cliff, with its pendent rocks and caverns. Happily we received

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ceived no other injury than a few trifling bruiſes, and a delay of about half an hour. At the end of this ſhort interval we were jogging on again towards Igualada, where, after having three times paſſed the Noya, we arrived about the ſetting of the ſun.

The country, which lies round this lovely village, is rich, highly cultivated, and well watered, hilly, and broken by ravins. The rock is ſchiſt, and the ſtrata are horizontal; as we advance the ſchiſt whitens, and becomes mixed with calcareous earth, till by degrees we loſe the ſchiſt; and after obſerving for ſome conſiderable ſpace limeſtone rock covered with white earth and clay, we meet only gypſum. In the ſame progreſs we loſt at firſt the vine, then the olive and the ilex, till nothing remained but the quercus coccifera, and the oak.

The ploughs of this country are the degenerate offspring of thoſe near Barcelona, not ſo well executed, but conſtructed upon the ſame general principles, with this difference, that they have no mould-board, no fin, and no coulter to be occaſionally uſed.

The

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The gypſum ſoon gave way to a vaſt expanſe of *chalk*, before we reached *Cervera*.

This city is in a moſt delightful vale, which is extremely fertile, and ſurrounded by hills, on one ſide of chalk, on the other of limeſtone. This part of the country, between the Noya, which runs into the Lobregat, and the Segre, which joins the Ebro, is the higheſt land in this part of Catalonia. The univerſity in this city was founded by Philip V. and has commonly about nine hundred under graduates, chiefly deſigned for employments in the church and at the bar, with ſome few for medicine. A. D. 1717.

Having aſcended from Cervera, the limeſtone rock appears; and the hills are covered near the city with vines, but at a greater diſtance with olives in vaſt plantations. As we advance, the limeſtone gives way to chalk, and, in the ſame proportion, barrenneſs ſucceeds to plenty; but when the *chalk* is again replaced by limeſtone, the face of the country improves, and the hills are once more covered with vines and olives.

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At *Tarraga* we fared ſumptuouſly, and had a good hall to ſup in, with ſingle bedded rooms, and glaſs in all the windows.

This village is ſituate in a valley of great extent, bounded by diſtant hills; the ſoil is clay, yet the crops look ſickly. The fields are all in tillage. They plough with mules.

Approaching *Lerida*, the valley becomes leſs fertile in its nature, being chiefly a hungry ſand covering a bed of gravel, chiefly ſilicious, with granite of every ſpecies. This, from the ſituation of the country, might be well expected, conſidering the multitude of rivers which here unite their ſtreams, all riſing in the Pyrenees, and flowing from mountains which extend, eaſt and weſt, more than an hundred and twenty miles.

Lerida is a pretty little city, with a cathedral, four pariſh churches, and ſixteen convents, thirteen for men, and three for women. It is ſituated on the *Segre*, under the protection of a hill, on which are ſeen the ruins of a caſtle, now going to decay, but formerly of conſiderable ſtrength.

The

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The rock on which it ſtands is ſilicious grit with a calcareous cement. This city, called *Ilerda* by the Romans, was rendered famous by the diſtreſs to which Julius Cæſar was reduced when encamped in its neighbourhood. He had taken poſſeſſion of a plain ſhut in between the rivers *Cinga* and *Sicoris*, and defended by a deep intrenchment, whilſt Petreius and Afranius, Pompey's generals, were encamped on a hill between him and Ilerda. In the intermediate ſpace, between the hill and the city, is a plain of no great extent, with an eminence, which, if ſeized, might be quickly fortified, and being fortified, would cut off all communication with the city. For this, during five hours, they maintained a doubtful conflict; but in the end fortune declared in favour of Afranius, and Cæſar retreated to his camp. Whilſt revolving in his mind how he ſhould cover this diſgrace, word was brought, that by the melting of the ſnow upon the mountains his two bridges were broken down, that the country was laid under water by the overflowing of the rivers, and that all communication

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was cut off with the provinces by which his army had been fed.

The immediate conſequence was famine. Whilſt he remained in this ſituation, meſſengers were ſent to Rome, and all gave him up for loſt. It was upon the news of this diſtreſs that Cicero left the city, and joined Pompey at Dyrrhachium. Cæſar, without loſs of time, ſet his men to work, and having made a ſufficient number of little boats, light and portable like thoſe which he had ſeen in Britain, after a few days ſent a party up the river in the night, who, with theſe boats, made good their landing, and having fortified a camp, ſecured his retreat.

The ſituation of Lerida is delightful, and the country in which it ſtands is one continued garden, covered with corn, with olive trees, and vines. For beauty few places can exceed it, but from the abundance of water, it is far from being healthy; and, ſince the year 1764, this city, with the villages of Tarraga, Igualada, and Martorel, and all the ſurrounding country, has been ravaged by a malignant fever, which was ſpread

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ſpread by the French troops in their return from Portugal,

Alarmed at the progreſs of this deſtructive fever, the king lately ſent one of his phyſicians, Don Joſeph Maſdeval, to examine the ſymptoms, and to inſtruct the faculty in the beſt method of treating it. His practice is ſo remarkable, and the atteſtations in its favour are ſo reſpectable, that, in treating of Carthagena, I ſhall lay them before the public. Previous to his arrival, notwithſtanding every ſymptom of debility, and proſtration of ſtrength, the phyſicians had continued to order bleeding as long as there was any blood to flow. Whilſt, however, we ſmile at their ſimplicity, we may too well remember when the ſame was the pernicious practice in our iſland.

The antiquities of Lerida, with its caſtle, and all that relates to the cathedral, are well deſcribed in a work lately publiſhed by D. Joſeph Feneſtres.

Being now at the extremity of Catalonia, it became neceſſary to lay in a ſtock of proviſions ſufficient to ſerve us till we ſhould reach Zaragoza, or at leaſt in aid

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of thoſe, which we might purchaſe by the way. Hitherto we had fared well; but now a little forethought became abſolutely needful. In Catalonia, the traveller is under the protection of the magiſtrate, who ſettles the price of every thing he may want, and annually publiſhes his *arancel*, that is, a table of aſſize, which muſt be hung up in ſome conſpicuous place of every inn. According to this, every gueſt occupying a bed-room with one bed muſt pay for that and his light three ſueldos and nine deniers, or ſomething leſs than five pence; but if there are ſeveral beds in one room, then each pays two pence halfpenny nearly, or two ſueldos Catalan. If he does not occupy a bed, he muſt pay for ſhelter ſix deniers, or $\frac{9}{17}$ of a penny. Every carriage pays one ſueldo per night for ſtanding. The ordinary is regulated as to the number and nature of the diſhes, both for dinner and for ſupper; and for theſe the prices are, including bread and wine for dinner, fifteen ſueldos, or one ſhilling and ſeven-pence farthing, and for ſupper, fifteen ſueldos three deniers.

For

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	Rs.	ds.	Sterling. s.	d.
For a moderate ſized fowl - -	4	12	0	11 5/8
Ditto ſmall - - -	3	20	0	10
Capon, if great - - -	9	30	2	1
Ditto ſmall - - -	8	0	1	8 1/2
Turkey, great - - -	30	0	6	5
Woodcock - - -	10	0	2	1 3/4
A dozen of eggs - -	2	16	0	7
Mutton, per pound of 36 ounces	4	12	0	11 5/8
White bread, ditto - -	1	12	0	4
Ditto ſecond, ditto - -	1	0	0	2 5/8
Flour, ditto - - -	1	0	0	2 1/8
Rice, ditto - - -	1	6	0	3 3/4
Maize, or Indian corn, ditto -	0	12	0	1 1/4

The above is reduced into ſterling by approximation, to avoid fractions of a farthing. It muſt be obſerved, that the reals in Catalonia are *ardites*, containing two ſueldos, or twenty-four deniers, which I here ſuppoſe equal to 2¼ of a penny ſterling.

From Barcelona to Lerida is twenty-five leagues, or nearly one hundred miles. From Lerida we came to Alcaraz, two leagues.

Here you turn your back upon Catalonia, and are reminded at every ſtep that you have entered a new kingdom. The red cap and the black velvet breeches are no longer ſeen, but in their ſtead a black velvet bonnet peaked like the mitre, and

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ſhort white trowſers, called *bragas*, reaching more than half way down the thighs. The face of the country is likewiſe changed, more hilly, and broken by torrents, not altogether barren, but uncultivated, and left deſolate. For many miles together there is neither houſe, nor tree, nor man, nor beaſt, except a few ſtraggling carriers with their mules, and by the road ſide are ſeen wooden croſſes, to mark the ſpot were ſome unhappy traveller loſt his life. The paſſengers think it a work of piety to caſt a ſtone upon the monumental heap; according to ſome, as a mark of deteſtation and abhorrence of the murderer, or, as others think, to cover the aſhes of the dead. This, in all ages, and by every nation, has been conſidered as a deed of mercy, becauſe, to remain unburied was regarded as the greateſt misfortune and diſgrace. The *inops, inhumataque turba* was ſuppoſed to wander on the banks of the Styx, excluded from the Elyſian fields, reſtleſs and miſerable, one hundred years, unleſs their bones were previouſly covered. Virgil, Æneid vi. ver. 325. Whatever may have been the origin of this practice, it is general

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general over Spain, and round moſt monumental croſſes is ſeen a heap of ſtones.

All the way from Lerida the deep ravins ſhew limeſtone rock in ſtrata, which are ſeparated by ſand and clay.

Having croſſed the Cinca, and paſſed through Fraga, which is built in one of theſe deep ravins, we begin to aſcend the mountains, where we ſee the ſame horizontal ſtrata of limeſtone, with clay between them. Theſe mountains produce only aromatic herbs.

In traverſing this barren country, a conjecture naturally aroſe, that Catalonia either acquired ſovereignty before the eſtabliſhment of Arragon, or that the people, by whatever name they were diſtinguiſhed, were more warlike than their neighbours; for had the kingdom of Arragon, if, referring to diſtant periods, we may call it by that name, been founded firſt, or had the inhabitants excelled the Catalans in ſtrength and courage, they would have left theſe mountains, and would have extended their dominion to the eaſt. The Cortes of Arragon declares, in the preamble to one of its ſtatutes, that ſuch was the barrenneſs of their country and the poverty of

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of their inhabitants, that if it were not on account of the liberty, by which they were diſtinguiſhed from other nations, the people would abandon it, and go in queſt of a ſettlement to ſome more fertile region. V. Robertſon, Charles V. p. 154.

The firſt night after we had croſſed the Cinca we lay at Candaſnos, a miſerable village without one convent, a circumſtance which ſufficiently beſpeaks the extreme poverty of its inhabitants.

Round this village I obſerved abundance of flints, ſuch as we find among the chalk in England, much limeſtone, and ſome gypſum. The inhabitants employ themſelves in collecting and waſhing earth for the purpoſe of extracting the nitre and ſea ſalt, which it contains in great abundance.

I was much diverted to ſee the aſtoniſhment, with which theſe aborigines viewed one of our fellow-travellers, a Frenchman, but a colonel in the Spaniſh ſervice. They are a diminutive race, and he is ſix feet ſix inches high, ſtout, well made, and of a ſoldier-like appearance, yet he could ſcarcely make them keep their diſtance. Theſe pigmies are no ſtrangers to gallantry, as we all could teſtify; for, as ill-luck would have it,

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it, oppoſite to us there lodged a fair one, for whom a deſponding lover had prepared a ſerenade. No ſooner had the village clock ſtruck twelve, than he began to ſing the praiſes of his miſtreſs, beating time upon the diſcordant ſtrings of his guitar. It is impoſſible to conſtruct a ſcale of ſenſibility or taſte, or to aſcertain preciſely to what degree the ear is tuned to harmony; but ſhould ſuch a ſcale be formed by any one who has never heard theſe ditties in ſome of the villages of Spain, like Farenheit with his thermometer, he will be inclined to place his loweſt point abundantly too high.

By the time this lover had retired to his reſt, we were obliged to riſe, and to proſecute our journey.

From Candaſnos we traverſed a barren plain of gypſum, twenty miles, without ſeeing either houſe, or man, or beaſt, or bird, or tree, or buſh, except only in one ſpot, where, to my aſtoniſhment, on apparently the ſame kind of ſoil, the olive flouriſhed.

At the end of this tedious morning we came to a ſingle houſe or venta, in which we were to dreſs our dinner. Here we found a party of ſoldiers ſtationed to ſcour the country, and to purſue the robbers, who had

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had been accuſtomed to conſider this part of Arragon as abandoned to them, with full liberty to plunder all, who ſhould venture to paſs through it. The ſoldiers knew our colonel, and offered to eſcort us on our way; but as we had three officers, all well armed, we did not think it needful to accept their kindneſs.

Whilſt the dinner was preparing, I took the opportunity of climbing a hill, at no great diſtance, which commands a moſt extenſive proſpect; but in that vaſt expanſe, far as the eye could reach, nothing was to be ſeen but a naked gypſum rock. It is here that nature ſeems to ſleep, and to have ſlept ſome thouſand years; or at leaſt it is here that ſhe has either neglected or forgotten her accuſtomed operation in forming vegetable earth. Turning from the dreary landſcape, I haſtened back to dinner, ſatisfied that nature never appears ſo beautiful as when her face is covered with a veil.

Having dined, we proceeded on our way, and till we began deſcending to the Ebro, had nothing but the gypſum rock in ſight, excepting for ſome ſhort intervals, when we ſaw the more fertile limeſtone. The whole of this gypſum is cryſtalized.

When

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When we had reached the plain, which is watered by the Ebro, we left that river to the left, keeping the gypſum mountains on our right, till we came near to Zaragoza, where the valley widens, and where very conſiderable hills, entirely compoſed of flints, interpoſe between the river and thoſe barren mountains.

As we approach the city, the proſpect brightens, the hills on our right ſhew the hanging cluſters of the vine, and the margin of the Ebro is covered with luxuriant crops of corn interſperſed with olives. Here the wines are excellent, more eſpecially in dry ſeaſons; but theſe do not yield as good brandy as the weaker wines of France. Indeed it is a pity that ſuch generous wines ſhould ever be diſtilled.

In long journies it is uſual to give the mules one day's reſt about the middle of the way. Happily for me this place of reſt was Zaragoza, being fifty computed leagues from Barcelona, and fifty-two from Madrid. Each league is about four miles and a half.

Zaragoza, by ancient Spaniſh authors written Çaragoça, and by the Romans called *Cæſarea Auguſta*, is a wealthy city on the

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the Ebro, at the conflux of two other rivers, one running from the north, the other a conſiderable ſtream deſcending from the mountains of the ſouth, and contains more than forty thouſand ſouls.

Immediately on my arrival I viſited the cathedrals. Here I forgot all the hard ſhips and fatigues, which we had ſuffered in this long journey; nay, had I travelled all the way on foot, I would have freely done it to enjoy the ſight of theſe cathedrals. That which is called *El Aſeu* is vaſt, gloomy, and magnificent; it excites devotion, inſpires awe, and inclines the worſhipper to fall proſtrate, and to adore in ſilence the God who ſeems to veil his glory; the other, called *El Pilar*, ſpacious, lofty, light, elegant, and cheerful, inſpires hope, confidence, complacency, and makes the ſoul impatient to expreſs its gratitude for benefits received.

In the centre of this cathedral there is an edifice, which is ſtrikingly beautiful. The principal front is a chapel of our Lady of the Pillar, who appeared upon this very pillar to St. James, and afterwards gave to him the image, which is worſhipped at her altar. Over this there is a dome corre-

ſponding

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ſponding to the great dome, under which it ſtands, ſerving by way of canopy to the image of the virgin. The three other fronts of this elegant tabernacle are in like manner chapels. Beſides the great dome, there are many ſmaller domes ſurrounding it, each with elegant paintings in compartiments, the ſubjects of which are hiſtorical, taken from the ſacred writings, or from the legends of the ſaints, to whom the chapels and altars are dedicated. Theſe are executed by D. Franciſco Bayeu, firſt painter to the king; and the architect, under the inſpection of whom theſe domes have been conſtructed, is Rodriguez, of whoſe taſte and judgment theſe decorations and improvements will remain a laſting monument.

The wealth of this cathedral is ineſtimable, in ſilver, gold, precious ſtones, and rich embroidery, ſent by all the catholic ſovereigns of Europe to deck its prieſts, and to adorn its altars. Many of theſe preſents being modern, are worthy of attention for their elegance, as well as for the value of their pearls, diamonds, emeralds, and rubies. In a word, whatever wealth could

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command, or human art could execute, has been collected to excite the admiration of all who view the treaſures of this church.

Among the other objects worthy to be ſeen is the church called *Engracia*, whoſe patron ſaint is ſaid to have walked a league, carrying his head in his hands, talking all the way, and in this manner to have preſented himſelf at the gates of his convent. In this church they ſhew an original painting by St. Luke, with many other relics, equally authentic, and not inferior in their value.

Straitened for time, I could take only a curſory view of the environs. In a country like this no living rock is to be expected, nor any thing but what has been moved; the ſpoils of various mountains brought down by the rivers, and blended here together. The chief depoſit in this place is limeſtone gravel, and on that the city ſtands. It is much to be lamented, that they have neither ſtone for building, nor good clay for bricks; hence all their churches, not excepting the beautiful cathedral, ſhew cracks from top to bottom. The cement is good, and abounds upon the ſpot, as may be ſeen by the bottom of the river,

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river, which is a bed of gypſum, commonly uſed here for making plaſter.

Had the time permitted, I ſhould have viſited all the buildings recommended to my notice, the convents of S. Ildefonſo, S. Franciſco, the Dominicans: not to mention thirty-ſeven others leſs worthy of attention, with the Audiencia, the Torre nueva in the great ſquare, built by the Moors, and Torre del Aſeu, which was a moſque. Short as was our ſtay, I ſtood long contemplating the beauty of the bridge over the Ebro, of ſix hundred feet, with its centre arch of one hundred; and at laſt turned from it with regret.

I had brought a letter for general O' Neile, the governor, but unfortunately he was abſent at Madrid. This loſs was in ſome meaſure made up to me by the attention of my valuable friend, the young Spaniard, who had connections in Zaragoza. With him, when I had finiſhed my excurſions, I went to drink lemonade and chocolate at the houſe of the fiſcal civil, and afterwards we ſupped together at don Philip de Canga's, the fiſcal criminal, both

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men of good underſtanding, and well informed.

Could I have known beforehand that ſo many objects worthy of attention were to be met with in this city and its vicinities, I would have laid my plan to have made a longer ſtay, and ſhould have derived more advantage from the converſation of theſe gentlemen. From them I learnt, that the late ſovereign, Ferdinand VI. had endeavoured to eſtabliſh manufactures in this city, on his own account; but that the expence of adminiſtration, with the want of a market for their commodities, ſoon brought the whole to deſolation, and the ſcheme was abandoned as impracticable.

Among other particulars, they gave me this account of their univerſity: it contains near two thouſand ſtudents, and for their inſtruction the doctors conſtantly reſiding are, forty in theology, twenty for the canon law, thirty-ſix for civil law, ſeventeen for medicine, and eight for arts. The foundation of this ſeminary was laid A. D. 1118, on the expulſion of the Moors; but the univerſity was not incorporated till

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A. D. 1474, and from that period it has conſtantly been cheriſhed and protected by the ſovereigns of Arragon.

Near this city paſſes the famous canal of Arragon, deſigned to form a communication by the Ebro from ſea to ſea, between S. Ander, in the bay of Biſcay, and Tortoſa, on the borders of the Mediterranean, a diſtance conſiderably more than one hundred Spaniſh leagues. This, perhaps, is one of the moſt arduous undertakings that ever was conceived. To make the communication through the whole extent by water is hardly poſſible, or, if poſſible, is by no means deſirable; becauſe, in paſſing the mountains of Biſcay, which are a continuation of the Pyrenees, only from Reinoſa, at the head of the Ebro, to the Suanzes, which flows into the bay near S. Ander, in the ſpace of three leagues, the fall is three thouſand Spaniſh feet. Eſtabliſhing therefore magazines at Suanzes and Reinoſa, with a carrying way between them, from Reinoſa they will navigate the Ebro. They have a great command of water: the head of the Pelilla has more than forty large fountains in the ſpace of one hun-

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dred yards in length, by forty in breadth, ſpouting up to a conſiderable height. This river does not run four hundred yards before it enters the Ebro, which has only three fountains, but theſe conſiderable.

It is remarkable, that between Fontibre (Fons Ebri) and Reinoſa, there is a ſalt lake.

The Ebro is navigable from Logroño to Tudela; and the canal, which begins at Tudela, is finiſhed as far as Zaragoza; from whence it will be carried ten leagues lower before it enters again into the Ebro. At Ampoſta, below Tortoſa, there is another canal, which opens into the bay of Alfarques, to obviate the inconvenience which ariſes from the frequent ſhifting of the bed of the Ebro, near its mouth. Not far from Zaragoza, the canal paſſes the mountain of Torrero by an open caſt of forty feet the mean depth, for more than a quarter of a league, or about one mile in length. The twelve leagues which they have finiſhed from Tudela, coſt ſixty millions of reals, which in ſterling is ſix hundred thouſand pounds; the twelve leagues are nearly equal to fifty-three miles Engliſh, upon

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upon a ſuppoſition that they are ſtatute leagues of twenty-five thouſand Spaniſh feet; but if we ſuppoſe them to be ordinary leagues, of ſix thouſand ſix hundred varas each, the twelve leagues will be only forty-two miles and a ſmall fraction. On the former ſuppoſition, the expence will be found eleven thouſand ſix hundred and eighty-two pounds four ſhillings per mile, or ſix pounds twelve ſhillings and eight pence per yard. This expence appears to be enormous; but if we conſider that the canals in Spain are nine feet deep, twenty feet wide at bottom, and fifty-ſix at top; and if we conſider the cutting through a mountain open caſt more than a mile, we ſhall not think it unreaſonable.

In a calculation which Mr. Whitworth gave for a canal to be made from Saliſbury to Redbridge, A. D. 1771. he ſuppoſed the depth four feet and an half, and the width at bottom fourteen feet. In theſe circumſtances he allowed three pence halfpenny for every cubic yard; but had the canal been deeper and wider, he muſt have made his eſtimate double, treble, or even more, not merely according

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to the quantity, but in proportion to the diſtance to which that quantity muſt be removed, and the perpendicular height to which it muſt be previouſly raiſed. Mr. Whitworth's canal does not contain more than ten cubic yards in each yard in length, and a conſiderable proportion of this may be done merely by the ſpade, without the aid of either pick-axe or barrow; whereas the Spaniſh canals contain near forty-nine and one ninth cubic yards in each yard in length, the greateſt part of which is to be moved to a great diſtance, and from a conſiderable depth, increaſing commonly in hardneſs in proportion to the depth.

This however will ſerve to ſhew the wiſdom of our people in the north of England, who by experience have learned to make their canals very narrow. With them three boats of thirty tons are preferred to one of ninety; and to carry thirty tons, they conſtruct their boats about ſeventy feet long, ſeven wide at top, and ſix at bottom; drawing four feet of water. But ſuch contemptible canals would not ſuit the ambition of a Spaniard, nor coincide with his ideas of grandeur.

As

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As we croſſed this canal near Zaragoza, on our way towards Madrid, we ſtopped to examine the works; and I muſt confeſs that I never ſaw any ſo beautiful or ſo perfect in their kind as the locks and wharfs; nor did I ever ſee men work with greater ſpirit, or in a better manner. The number of men employed is three thouſand, of which two thouſand are ſoldiers, the others peaſants. To the former they give three reals a day in addition to their pay; but they work moſtly by the piece, and receive what they earn.

As we increaſed our diſtance from Zaragoza, we quitted the flat country, and began to climb between the mountains, which at a lower level ſhew horizontal ſtrata of limeſtone, whilſt all the ſummits, both near us and at the greateſt diſtance, are evidently gypſum. In the vallies we found clay, and flints, ſuch as our chalk commonly produces. Theſe circumſtances lead to a ſuſpicion, that the gypſum on theſe high mountains was once chalk, although now ſaturated with vitriolic acid.

We dined at *Muel*. In this little village are many potters, who turn their own wheels,

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not by hand, but with their feet, by means of a larger wheel concentric with that on which they mould the clay, and nearly level with the floor.

Proceeding after dinner, we left the gypſum mountains at ſome diſtance, till we approached *Longares*, which is ſeven leagues from Zaragoza, where this ridge dies away, and leaves before us a wide extended plain, bounded by diſtant hills. The ſoil is clay, with gravel of flint, ſilicious grit, and white quartz, more eſpecially along the middle of this ſpacious vale, in which there appears a bed of it all ſmooth and poliſhed, as we ſee in brooks ſubject to ſtrong land floods and torrents. This plain produces moſt luxuriant crops of corn, with vines, and abounds in ſheep.

At eight in the evening we arrived at *Cariñena*, one league from Longares, having travelled our eight leagues, which is the uſual journey: this we may reckon ſix and thirty Engliſh miles.

Here one of our countrymen left a hiſtory behind him, written in Engliſh, on the wall, for a warning to thoſe who may chance

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chance to follow him. In the night, two men attempted to rob him in his bed; but he happily awoke, and ſtarting up, knocked one down, and made the other fly. The one whom he knocked down was ſervant to a French officer with whom he was travelling, the other was one of the coachmen. From the obſervations I have had occaſion to make in Spain, I am of opinion, that no gentleman ſhould ſleep in a room alone, unleſs he has made faſt the door.

The wine which this country produces is of the fineſt quality, and I have no doubt will be much coveted in England whenever the communication ſhall be opened to the ſea.

Cariñena contains two thouſand and thirty-ſix ſouls, and has two convents. From hence we proceeded along a fruitful bottom, covered with vines and olives; then aſcending among mountains, we found, at a lower level, ſchiſt with its lamina ſtanding perpendicular, and ſoon after ſilicious grit, inclined to the horizon, then limeſtone rock.

In this country we paſs vaſt tracts of land ſuſceptible of cultivation, which, I have no doubt, will be one day covered with

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with luxuriant crops, although at preſent we ſee little beſides the quercus coccifera, and a few aromatic herbs.

Croſſing the river Xiloca, at the diſtance of five leagues, we came to Daroca, where we dined.

This city, incloſing within its walls two thouſand eight hundred and ſixty-three ſouls, is built in a ravin, and would have been ſwept away by torrents, had not the inhabitants made a drift of ſix hundred yards through the heart of a mountain, to open a communication with the river. This work is worthy of inſpection.

Daroca appears to have been always of importance, as the fortifications, although now decayed, ſufficiently evince. It formerly occupied the hills for ſafety, but now it has crept down into the vale for ſhelter.

The rocks, which are here laid bare, are ſchiſt, covered with limeſtone.

Climbing among theſe, it is beautiful to look down upon the vale, which feeds the city, every where ſhut in by uncultivated mountains, itſelf well watered, covered with deep verdure, and loaded with the moſt luxuriant crops. To view ſuch a ſtrip of

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of land excites a wonder how the inhabitants can live.

The exquiſite beauty of this ſpot, and the protection which it offered, were powerful attractives to the prieſts and to the religious orders, who in this city have no leſs than ſix convents and ſeven pariſh churches, of which, one is collegiate, although not a biſhop's ſee.

After dinner we aſcended to much higher mountains, in which the ſchiſt and the ſilicious grit appear in ſtrata, inclined to the horizon in every angle, and in every poſſible direction. All nature here ſeems to have ſuffered the moſt violent convulſions.

Theſe mountains muſt certainly abound with minerals, of which we ſee every mark but the mineral itſelf. Indeed, when the Romans ſettled here, it was with a view to mines. From the nature of the rock, and from the peculiar appearance of the ſchoerl, I have no doubt that tin is not far off.

We are here on the higheſt land in Spain, with the water falling behind us into the Ebro, whilſt immediately before us it runs into the Tagus.

When we begin deſcending to the ſouth weſt,

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weſt, we obſerve a deeper ſoil, fewer crags, and the ſtrata more inclined to the horizon, than we found in the declivity to the north, and to the eaſt. This circumſtance will appear perfectly natural, when we conſider that in the latter direction the water does not run much more than one hundred miles before it enters the ſea; whereas in the former it muſt go nearly ſix hundred miles to find the ocean. Yet this circumſtance alone will not account for the confuſion which appears in all the ſtrata as we aſcended from Daroca; the ſea ſhells which every where abound in the limeſtone, wherever it is found on theſe high mountains, prove ſufficiently that this country was once covered with the ſea.

Without entering at preſent on the different ſolutions which have been given of theſe phænomena, I ſhall only tranſiently obſerve, yet I wiſh it to be remembered, that theſe ſtrata are not now in the ſame poſition in which they lay, when the whole peninſula was covered with the waters of the ſea.

On theſe mountains, both in the morning and the afternoon, we obſerved many

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monumental croſſes, each placed near the ſpot on which the unwary traveller had been robbed and murdered, or had met with ſome fatal accident. At this, conſidering the nature of the country, I was not ſurpriſed; but I muſt own my blood ran cold, when I ſaw ſome croſſes in the villages through which we paſſed. Their numbers ſufficiently evince, not only a bad diſpoſition in the inhabitants, but a bad government. No people can be more paſſionate than the Welch, yet in Wales we ſeldom hear of murder; they do not thirſt for blood, and ſhould any one feel himſelf provoked to take away another's life, he would tremble at the laws. But in Arragon, this crime often paſſes with impunity, unleſs as far as one murder is the parent of another.

The eſcrivanos, who perform the office of coroner, are many of them poor, hungry, rapacious, and deſtitute of principle; and without them no evidence can be received. Theſe venal wretches are commonly prepared with equal indifference to ſell juſtice or injuſtice to him, who offers moſt; and all over Spain they have free ſcope in the country

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country towns, becauſe few gentlemen live in or near a village, to protect the peaſant, being moſtly reſident in cities.

We lay in the miſerable village of *Uſet*, the laſt in Arragon, and two leagues from Daroca.

Having neglected to lay in proviſions before we left that city, we began, for the firſt time, but not the laſt, to ſuffer want, and to murmur at the inattention of our captain. When we left Barcelona, a common fund was made to pay the expences of the journey, and we immediately proceeded to the election of a treaſurer. The parties were our colonel, a Frenchman, tall, handſome, elegant in his manners, ſenſible, well-informed, perfect maſter of the language, and well acquainted not only with the mode of travelling in Spain, but with the precautions needful to be taken by thoſe, who would paſs with any comfort from Barcelona to Madrid. Naturally our choice ſhould have fallen upon him; but unfortunately there were objections, which every one felt, but which no one dared to name. As a ſtranger, and as ignorant of the language, I was out of the queſtion.

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queſtion. Of the Spaniſh gentlemen, one was a cadet in the army, lively, ſenſible, and of the nobleſt diſpoſition; but being not more than fourteen years of age, he likewiſe was rejected. The other gentleman, under whoſe wings the cadet travelled, was a Spaniard of a certain age, a captain in the army, and therefore accuſtomed to travel; of a grave deportment, and for integrity worthy of the confidence, which was to be repoſed in him; but—(for in every character there is ſome but)—he was a bigot. Naturally auſtere, ſilent, and reſerved, his religion taking its complexion from his temper, he became ſevere, moroſe, and ſeemed to cheriſh a cold indifference to all the comforts of this life both for himſelf, but more eſpecially for his friends; yet in him all our ſuffrages met; he was to keep the purſe, to pay all expences, to render an account, which he did with the moſt exact fidelity, and to make proviſion for the journey, where proviſions were to be procured; but this he neglected, although his coadjutor, the colonel's valet, was active, and always ready to run at his command to the butchery for fleſh, to the baker's for bread,

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bread, and to the vintner's to purchaſe wine. With a good look out we might have had hares, partridges, rabbits, and poultry in abundance; whereas, by neglect, before we reached Madrid, we were half ſtarved; and yet our journey coſt much more than, with good management, would have made us comfortable.

In the morning, when we were ready to leave Uſet, this was the manner of diſcharging the account. The miſtreſs of the houſe, ſupported by ſome female, made her approach, at firſt with a low voice and with a modeſt air. The captain, ſupported by his colonel, who upon occaſion could look very fierce, repelled the charge, and exclaimed againſt the exorbitancy of the demand. The miſtreſs, appealing to the maid, who was prepared to defend her moderation, by degrees raiſed her voice, and became violent almoſt to fury. The captain ſputtered, and the colonel ſometimes put in a word to allay the ſtorm, whilſt the cadet ſtood laughing at a diſtance, till at the end of about twenty minutes the ſtorm ſuddenly ſubſided, the landlady looked placid, and quietly accepted one-half

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one-half of the original demand. If in the outſet our captain had with calmneſs aſked for the *arancel*, all this trouble had been ſaved, becauſe every publican is obliged to have one hung up in his houſe, and in that the price of every article, with the *ruido de caſa* (noiſe of the houſe) and beds, is fixed by the magiſtrate.

This buſineſs being ended, every one took his corner in the coach, the coachman clacked his heavy whip, and the moment we began to move, the cadet, looking upon his mentor, croſſed himſelf.

Our way lay acroſs an extenſive plain, bounded by diſtant hills, in which the ſoil is ſand and gravel, covering a limeſtone rock. The aſcent to theſe hills is very eaſy, and the hills themſelves are ſuſceptible of cultivation; yet they are deſolate, and for miles diſcover neither houſe nor tree, except the juniper.

At eleven in the morning we arrived at *Tortuera*, having travelled four leagues to dinner. This little village, the manſion of wretchedneſs and miſery, is built upon a rock of marble, ſuch as would not diſgrace a palace. The ſun was ſhining very bright;

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not a cloud was to be ſeen; yet theſe poor peaſants filled the church, each with his lighted taper, prepared to join in a proceſſion.

The ploughs of this diſtrict are much degenerated from the perfection of thoſe at Barcelona. The handle, the ſhare, and the ſhare iron, all paſs through one mortice in the beam, which is made crooked for that purpoſe. All theſe are faſtened by a wedge. It is ſcarcely poſſible to ſee a rougher implement, without coulter, fin ſheets, or mould board; but inſtead of this, two pins, one on each ſide, driven into the heel of the ſhare.

All the way over the mountains, till you come near to Anchuela, the limeſtone prevails, charged with foſſil ſhells, ſuch as oyſters, entrochi, and belemnites, with terebratulæ and chamæ. A little to the ſouth of this, near Molina, on the mountains between the Xiloca, which goes into the Ebro, and the Gallo, which joins the Tagus, under the limeſtone they find a red gypſum, containing alſo foſſil ſhells. It is remarkable, that this gypſum, decompoſing and loſing its vitriolic acid, cryſtalliſes in hexagonal priſms

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priſms of a red colour; of theſe I collected many of different ſizes, which ferment with the nitrous acid.

All the way over theſe deſert mountains, with their interpoſing vallies, not one object preſents itſelf to cheer the weary traveller; no houſe, no tree, except the ſavin, the juniper, and a ſpecies of cedar, which is peculiar to this country; but from time to time a monumental croſs reminds him of mortality.

We, indeed, had little cauſe to fear, becauſe we were well armed, excepting when we choſe to walk, and to leave the coach behind us. Some officers, who paſſed this way, being at a diſtance from their carriage, in which, little ſuſpecting danger, they had left their ſwords, upon entering a wood they were ſuddenly attacked and robbed by a banditti, who immediately eſcaped into the thicket, and were ſeen no more. One morning, when we had walked before the carriage, and I had got the lead, fearful of being too far a-head, I looked back from time to time, taking care never to be out of ſight of our captain, who was following at a diſtance; but finding myſelf entering

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upon a foreſt, I ſhortened ſail, and recollecting the ſtory of the officers, I turned oftener than uſual to look behind me, when ſuddenly, having loſt ſight of my companion, I ſoon diſcovered him again, but out of the road, and running very faſt. Not being able to imagine why he ran, whether we had miſſed the way, or whether he was eſcaping for his life, I purſued him over the hills, and through the bottoms, where it was not poſſible to know which way I ſhould direct my courſe to catch him, till I had the happineſs to ſee him ſtop. When I came up to him, I found that our cadet had wandered from the way, and had taken another road. Fortunately for him, his good mentor ſaw him, purſued him, and brought him back again. When we were thus together, all my apprehenſions vaniſhed, and we leiſurely returned into the road, which we had quitted; but here a new perplexity aroſe; for, from the ſummit of a hill, which had a commanding proſpect, we could ſee nothing of the coach, nor could we determine if it were before us or behind us. At laſt, not being able to diſcover the track of the wheels, we walked halfway back

to

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to the village, from which we had departed, where we found the coach ſticking in the mire, and ſome peaſants engaged with their implements, working hard to ſet it free.

The country contiguous to Anchuela, compared with the uncultivated mountains of Arragon, appears a Paradiſe. The limeſtone rock is covered with a deeper ſoil, and the little hills are cultivated to their ſummits; yet Anchuela is a moſt miſerable village, and in the poſada there is only one room, with two filthy beds. When beds are wanting, officers uſe their privilege, and are billeted by the alcaldé on ſome private family.

In walking out to view the country, I found on the ploughed land abundance of cockle-ſhells and cardias.

The plough is preciſely the ſame as that laſt deſcribed. An Engliſh mechanic will not readily conceive how a plough can be made, not only without coulter, drock, ground-wriſt, and mould-board, but without any ſheets to ſupport the handle and the ſhare. To conſtruct ſuch a plough would puzzle their invention; yet nothing

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can be more ſimple, for the beam itſelf being curved, ſupplies the place of ſheets.

In leaving Anchuela, Tueſday, May 16, we ſent the carriage forward, and walked by a much nearer way to meet it, winding through a valley, which is ſhut in by ſwelling hills, and directing our courſe by a rivulet, whoſe waters are as clear as cryſtal. The ſides of theſe hills are ſhaded with ſavin, juniper, and the ulex europæus.

This would be a beautiful ſituation for a nobleman's ſeat. Here he would have plenty of wood and water, with corn, and wine, and oil, in great abundance, whilſt the money, which he ſpent in the maintenance of a great eſtabliſhment, circulating among his tenants, would cheriſh their induſtry, and animate the whole country for many miles around him.

Throughout the whole of Spain I cannot recollect to have ſeen a ſingle country reſidence, like thoſe which every where abound in England: the great nobility ſurround the ſovereign, and are attracted by the court; the nobles of inferior rank or fortune are either aſſembled at Madrid, or eſtabliſh themſelves in the great cities of the

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the diſtant provinces. This deſertion of the country has ariſen, not as in other kingdoms, from the oppreſſion of the great barons, and from the franchiſes enjoyed by cities, but from two other cauſes more extenſive in their operation. The firſt of theſe was the diſtracted condition of the empire till the reign of Ferdinand and Iſabella, divided into ſeparate kingdoms of ſmall extent, all engaged in never-ceaſing wars againſt each other, which drove men of property into the cities; the ſecond, was the jealouſy of the court, which ſoon followed the expulſion of the Moors; a jealouſy, which for more than a century and an half was merely political, leſt the grandees, ſupported by the people, ſhould endeavour to regain their conſequence. To this fear, at the acceſſion of the preſent family, ſucceeded one of a more alarming nature; from the attachment which many of the great families had diſcovered to the houſe of Auſtria. For this reaſon they were aſſembled round the throne, and kept conſtantly in ſight. The condition of the French is certainly better, and ſome inhabited caſtles are to be found in every pro-

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vince. But, in this reſpect, no country can be compared to England. If the cauſes were to be aſſigned for this equal diſſemination of wealth, which appears in the delightful manſions of the great, and the ſeats of country gentlemen, ſcattered over the face of the whole iſland; of that which is to be ſeen in all our cities, great towns, and even country villages; which meets the eye in every farm houſe, and which ſhews itſelf in the high ſtate of cultivation, in our agricultural improvements, in the flocks, the herds, and the luxuriant crops, with which our fields are covered; the leading cauſe would probably be found in the conſtitution of our government, not merely as ſecuring life, liberty, and property, but as making it neceſſary for the firſt nobility to cultivate their intereſt in the country, if they will preſerve their influence at court. By reſiding on their own eſtates, they not only ſpend money among their tenants, which, by its circulation, ſets every thing in motion, and becomes productive of new wealth, but their amuſement is to make improvements by planting, draining, and breaking up lands, which would have remained

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remained unprofitable. They try new experiments, which their tenants could not afford, and which, if ſucceſsful, are ſoon adopted by their neighbours; they introduce the beſt breed of cattle, the beſt implements of huſbandry, and the beſt mode of agriculture; they excite emulation; they promote the mending of the roads; and they ſecure good police in the villages around them. Being preſent, they prevent their tenants from being plundered by their ſtewards; they encourage thoſe, who are ſober, diligent, and ſkilful; and they get rid of theſe, who would impoveriſh their eſtates. Their farmers too, finding a ready market for the produce of the ſoil, become rich, increaſe their ſtock, and, by their growing wealth, make the land more productive than it was before; nay, their tradeſmen, when they get money, which is not wanted to increaſe their peculiar ſtock, either lend it to the farmer, or themſelves purchaſe land, and bury their treaſures in the earth; yet not like that which is hid by the miſerable ſlaves of a deſpotic government, to remain unprofitable,

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ble, but to produce, ſome thirty, ſome ſixty, and ſome an hundred fold.

The country, which we paſſed over between Anchuela and Maranchon, in its appearance and in its calcareous rock, reſembles that, which is about Atford, in the road to Bath, or rather like that which is round Keinſham, between Bath and Briſtol.

Maranchon, remarkable, like other villages around it, for the poetic fire of its inhabitants, is a little village ſituated on a declivity, ſheltered from the north by high limeſtone rocks, but open to the ſouth, and looking down upon the rich valley by which it is fed. The ſoil is diſſolved limeſtone, with ſand and clay, forming a moſt fertile marle. At this ſeaſon it is all alive; I counted forty ploughs at work, all employed in preparing for their peas.

Having obſerved the reſemblance between this country and that, which is to the eaſt and to the weſt of Bath, I felt a peculiar pleaſure in picking up on the ploughed land, belemnites, cockles, and cardias, with other bivalves, and fragments

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of the piſolite, of the ſame ſpecies and of the ſame colour with thoſe, which I had formerly collected at Keinſham, Atford, Wraxal, Melkſham, and on the adjacent hills.

After dinner we left Maranchon, and, in about three or four miles, loſt the lime-ſtone, which was ſucceeded by ſilicious grit of a peculiar texture, ſomewhat like bran. This, however, did not continue, for at *Aguilarejo* we paſſed between two high rocks of fine grit, or ſand ſtone, very white, with the ſtrata inclined to the horizon, in the angle of forty-five degrees. The country we paſſed over between theſe two miſerable villages, after quitting the rich valley of Maranchon, is little cultivated, and, excepting two woods, the one of oak, the other of ilex, is naked and unprofitable, although theſe woods ſhew ſufficiently what the country could produce.

Near to Aguilarejo the crops of wheat appear half ſtarved, and the fields are covered with the wild ranunculus.

This day we ſaw five monumental croſſes, one coming out of a wood, one at a place where four ways meet, the reſt on the ſummits

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mits of the hills, from whence the robbers could ſee every thing that was paſſing on the road, and know which way to eſcape.

We ſlept at *Alcolea*, having travelled, according to the *Guia de Caminos*, only ſix leagues and a half ſince three in the morning. I ſhould conceive that the leagues here, like the miles in diſtant provinces with us, are longer than the legal meaſure.

The country about Alcolea is covered with corn, excepting only ſome few hills, which, ſhaded by the ilex and the juniper, preſent a never-failing verdure.

As we proceeded, aſcending among the hills, at the diſtance of a few miles from Alcolea, culture ceaſes, and the country is abandoned to the ilex, the ulex europæus, and the quercus coccifera, theſe laſt diminutive, but the firſt reſpectable.

The roads are here moſt deteſtable. The Spaniſh nation is tenacious of its freedom from the *Corvè*; but this appears to me bad policy. After feeding the peaſant, who cultivates the ſoil, the firſt ſurplus of revenue ſhould be applied in making roads to carry the crops to market. Farmers, if left to themſelves, will never pay attention,

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nor expend their money, their labour, and their time, on this moſt important object; and in Spain, the gentlemen of landed property, being confined wholly to the cities, neither feel the want of roads, nor ſee their intereſt concerned in having them repaired. It is the landlord in every country who ultimately bears this expence, and it is he who principally reaps the benefit.

As we approach *Algora*, the ſilicious grit, or ſand ſtone, which has continued all the way from Aguilarejo, gives place to limeſtone charged with foſſil ſhells.

In this village the church is the only object, which can give pleaſure; it is very pretty.

Beyond this the country becomes incloſed with limeſtone fences; but although incloſed, it ſeems to be left uncultivated, covered in general with ſtones, and abounding with oak, ilex, juniper, the ulex europæus, the lavendula ſpica, the common thyme, and the geniſta.

Here, for the firſt time ſince we left Barcelona, we ſaw horned cattle feeding.

We paſſed by three monumental croſſes, all at the junction of four ways. In a country

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country where few people travel, a thief has little chance of paſſengers, unleſs where two ways croſs.

As we drew near to *Grajanejos*, we travelled over an extenſive plain of open field land, well cleared, and all in corn, bounded by a foreſt of the moſt luxuriant ilex, through which we paſſed, not without circumſpection as we entered, and when we were about to quit it.

Grajanejos is built upon a rock of limeſtone, looking perpendicularly down upon a fertile little vale, above which it is elevated more than three hundred feet. The ſituation is romantic, and the valley has the appearance of a ravin.

They have here no beef. Mutton is eleven quarts, or a fraction more than three pence per pound of ſixteen ounces. Bread three quarts and a half, or one penny nearly. Labour is four reals, or leſs than ten pence a day.

In converſing with the *padre cura*, that is, with the rector, I learnt that he had ſixty houſes in his pariſh, two hundred and forty communicants, beſide one hundred children under the communicating age, which

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which is eight. All above this age are compelled to confeſs, and to receive the ſacrament. His living is worth eight hundred ducats per annum; a conſiderable benefice for Spain, being equal to £.87. 17 *s.* 8*d.* ſterling.

May 18. From Grajanejos we croſſed an extenſive plain, and paſſing through a foreſt of ilex, entered upon a level country, in which, for many miles, we ſaw neither tree, nor houſe, nor any token of human exiſtence, except one monumental croſs. But after this, as we got within the influence of Guadalajara, we met with flocks of ſheep, good corn, and ſandy banks covered with vines, which to us had all the charms of novelty. Deſcending to a lower level, we diſcovered a vaſt expanſe before us, bounded by ſnowy mountains to the north. In this fertile vale plenty ſeems to have eſtabliſhed her dominion, and to be conſtantly repleniſhing her horn with corn, and wine, and oil.

Guadalajara is divided into ten pariſhes, and is ſaid to contain ſixteen thouſand ſouls, with fourteen convents. It is rendered famous by the royal manufacture of broad cloth,

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cloth, and is remarkable for the ſpecies of cloth made of the Vigogna wool. Here the king employs near four thouſand people, to whom he pays monthly ſix hundred thouſand reals, or ſix thouſand pounds, beſides about forty thouſand ſpinners ſcattered in the ſurrounding villages.

This manufacture was firſt projected by the Baron de Riperda, A. D. 1720, who brought workmen from Holland, but with very ill ſucceſs; and Don Joſeph de Carvajal, prime miniſter to Philip V. who attempted the ſame at S. Fernando, had in his day little more to boaſt of. During the war of 1740, the Engliſh government, with a view to diſtreſs the Spaniards, having prohibited the importation of their wool, the ſudden ſtagnation had for the moment the effect deſired; but new channels were ſoon opened, freſh markets were diſcovered, and the price of wool was conſiderably raiſed. To prevent ſuch ſtagnation for the future, Mr. Wall, then in England, decoyed one Thomas Bevan, a ſkilful workman, from the town of Melkſham, in Wiltſhire, with many others, and eſtabliſhed them at Guadalajara, where they contributed to raiſe the credit

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credit of an expiring manufacture. Some years after this, Thomas Bevan, having met with ill uſage, died of a broken heart; and in him this undertaking ſuffered an irreparable loſs.

The conduct of the Engliſh, in refuſing to purchaſe of their enemies this profitable article of commerce, reminds me of a meaſure equally politic adopted by the Spaniards with the ſame views, and on a ſimilar occaſion, when, during the *war of the ſucceſſion*, A. D. 1704, they prohibited the ſale of their wines, oil, and fruits, to the Engliſh and the Dutch, who, in conſequence of this, formed connection with the Portugueſe, ſo that now, more eſpecially, in England Port wine ſupplies the place of ſack.

A. D. 1755, government finding it impoſſible to derive a profit from this declining manufacture, delivered it over, together with the ſimilar one eſtabliſhed at S. Fernando, to the *Gremias*; but after a few years (A. D. 1768) the king once more undertook to manage both on his own account, and ſoon removed the ſiſter manufacture from her former abode to *Brihuega*, ſtill permitting her to retain the name of S. *Fer-*

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nando, as being well known and much honoured in the market.

If we may believe Uſtariz, the infant undertaking, in his day, ſwallowed up the whole of the provincial revenue, and yet was conſtantly in debt. This we may readily believe; becauſe, if any individual were to conduct ſuch an extenſive manufacture on his own account, ſuppoſing him not to have been previouſly inſtructed in the buſineſs, although he ſhould have been bred to trade, he would loſe his money; a private gentleman would loſe more, a ſovereign moſt.

Conſidering what ſalaries muſt be paid, how little ſcope for diligence and parſimony, how much for negligence and rapine, and how very weak the inducement to excel; a ſovereign can have no reaſonable hope to multiply his gains. If he is to force a trade, and to eſtabliſh a monopoly by the exertion of ſupreme authority, all theſe evils will increaſe againſt him, and the illicit trader will meet him to advantage. If he is fairly to ſtand a competition, the private tradeſman, too active and too zealous for the ſovereign, will ſeek out new markets, and by attentions, by civility, by acts of friendſhip, and

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and by barter or reciprocal exchanges, gain the preference, whilſt the ſovereign, unleſs he ſinks the price, will remain with his commodity unſold. Should the price be ſunk low enough to force a market, the loſs muſt be conſiderable, and no manufacturer will be able to riſe up againſt the ſovereign, whoſe capital is inexhauſtible, or to ſtand the competition with him, who can afford to ſuffer loſs without fear of bankruptcy.

Uſtariz condemns all ſuch eſtabliſhments, and writes a chapter to prove " que las fabricas de quenta de los ſoberanos no florecen;" that manufactures on the ſovereign's account can never proſper. Count Campomanes cannot approve them: the principles which this able ſtateſman labours to eſtabliſh, have all much higher views, and lay a more certain foundation for national proſperity. His principles are applicable to every nation, whether rich or poor. He would, in the firſt place, diffuſe knowledge by free-ſchools, under the conduct of the beſt maſters, to teach drawing, mechanics, mathematics, chemiſtry, agriculture, and languages, with the theory of commerce, and of political œconomy; he

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would promote juſtice and ſobriety, diligence and parſimony; he would encourage public ſpirit and œconomical ſocieties; he would ſend young men, properly qualified, to travel, for the purpoſe of inſpecting all the modern improvements in arts, manufactures, and commerce, adopted by more poliſhed nations; he would render communication eaſy, by means of roads and canals; he would regulate the poſts, and eſtabliſh banks; he would provide plenty of fuel for manufactures, as being eſſential to their exiſtence; he would honour the mechanic, the manufacturer, and the merchant; he condemns all monopolies, and all corporation privileges, as partial, oppreſſive, uſeleſs, and unjuſt; he would encourage ſtrangers, and make naturalization eaſy to them; he would diminiſh the number of feſtivals, prevent the abuſe of monaſtic inſtitutions, encourage induſtry in convents, and employ in ſome profitable labour all who are confined in priſons; he would conſtruct good harbours, quays, and wharfs, and cauſe ſea charts to be formed with the moſt minute attention. To theſe wiſe regulations, recommended by that able politician,

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tician, if we might venture to ſuggeſt any additional proviſions, they might be theſe few: ſuffer the demand for money to regulate the rate of intereſt; encourage inſurance among merchants and manufacturers; tolerate all religions; protect perſons and property from real tyranny by civil liberty, and from private violence by wiſe laws enforced by an active and vigilant police; make commerce free, and live in peace. With theſe proviſions, there could be no occaſion for the ſovereign to be a manufacturer, much leſs would he have any inducement to become the chief monopoliſt. Theſe proviſions not having been adopted by the Spaniſh government, the manufacturers of other nations can purchaſe the raw material, pay freight, charges, and heavy duties, and importing them into Spain, make conſiderable profits where the monarch ſuffers loſs.

From Guadalajara to Alcala, *Complutum* of the Romans, is four leagues. This city, watered by the Henares, and fed by a fertile and moſt extenſive plain, is one of the prettieſt in Spain. The buildings are of granite, of limeſtone, and of brick, and the pavement is of ſmooth round ſtones, moſtly ſilicious, all

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the ſpoils of diſtant mountains. The archbiſhop of Toledo has a palace here, the work of Covarrubias and Berruguete; in one front of which are eighty-two pillars, in the other fifty-two. The churches are thirty-eight, convents twenty-ſeven, the colleges nine. One of theſe I viſited with peculiar pleaſure, as may be readily conceived, when I ſay that it was founded by Cardinal Ximenes. The library is well furniſhed; the books are excellent and well arrranged. Among theſe the original Complutenſian Bible muſt command for ever the grateful remembrance of the chriſtian world. In this apartment are preſerved his letters, his ring, his buſt, and his picture; but theſe, though beautiful, faintly expreſs the greatneſs of his mind, and the goodneſs of his heart.

From Alcala to Madrid is ſix leagues, in which ſpace three rivers, the Henares, the Jarama, and the Manzanares, diffuſe their fertilizing ſtreams over a vaſt expanſe of level country, by which conſiderable cities, together with the capital, are fed.

The approach to this from Alcala is beyond deſcription beautiful. The road is ſpacious, and the gate is elegant. On the left

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left we look into the garden of the ancient palace, called Buen Retiro, with the botanical garden and the extenſive alleys of the Prado, well planted and adorned with numerous fountains. On the right, through the trees, we catch a glimpſe of another gate, whilſt the wide ſtreet of Alcala, ſtretching gracefully before us, and bending in the line of beauty, contracts, as it advances up a gentle hill, thus diſcovering at one view ſome of the moſt conſiderable of the public buildings, and the habitations either of the firſt nobility or of the foreign miniſters.

In this ſtreet is the *Cruz de Malta*, a large hotel, to which we drove, and where for the night, after my companions were diſperſed, I took up my abode in ſolitude, with the reflection, painful for the moment, that I was come to my journey's end. It had been wearifome, and not altogether free from accidents and diſagreeable adventures; but then, with an object conſtantly in view, every thing may be endured. Beſides, in theſe fourteen days, I had got acquainted with my fellow-travellers, and for one of them had contracted friendſhip and eſteem.

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Even for the others, whilſt thus united by one common intereſt, I felt regard; but now that our journey was at an end, the idea of diſperſing to meet no more left a gloom which ſolitude was ill ſuited to relieve. At the end of a purſuit, a vacuum ſucceeds, which muſt be painful, till ſome new, ſome intereſting object is in view, and gives freſh occupation to the mind.

On this occaſion, I amuſed myſelf with reflections on the feelings of the ten thouſand Greeks, when, having ſurmounted all their difficulties, and arriving ſafe in Greece, they immediately diſperſed to go in ſearch of new adventures. What miſery muſt be theirs, whoſe views in life are cloſed. This appears to be the chief ſource of wretchedneſs in cloiſters, where little ſcope is left for either hope or fear.

Before we parted we had to ſettle our accounts.

The coach, with two coachmen and ſeven mules, coſt us by agreement thirty-five piſtoles, or twenty guineas; and as a gratuity, we gave the men ſix piſtoles, equal to three pounds twelve ſhillings. The expence upon the road for diet was eleven hundred

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hundred and forty reals. The ſum total, therefore, of our expenditure was ſix and thirty pounds; which, for a journey of a hundred Spaniſh leagues, accompliſhed in fourteen days, muſt be conſidered moderate,

MADRID.

AS the court was abſent from Madrid on my arrival, all my letters were for the preſent uſeleſs, excepting one from M. Sage, of Paris, to Don Caſimir Ortega, who as principal botanical profeſſor, is well known to all the lovers of that ſcience. I had indeed a letter to a grandee of Spain, then at Madrid, with the ſtrongeſt recommendation, and from him I had expected much; but I was diſappointed in my hopes. I found him polite, but cold; ſenſible and well informed, but ſilent and reſerved; univerſally eſteemed for the goodneſs of his heart, but ſo perfectly abſorbed in the formal duties of religion, that I could derive no advantage from his friendſhip. In a word, he appears to be one of thoſe, to whom the Italian proverb may with ſome degree of juſtice be applied,

Tanto

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Tanto buon che val niente: ſo good that he is good for nothing.

In Don Caſimir Ortega I found the activity of friendſhip, and every poſſible attention. By his permiſſion I had acceſs at all hours to the botanic garden. This well choſen ſpot being upon a declivity, inclined towards the pardo, and ſeparated from it by iron rails; whether you are walking or riding in that ſhady grove, refreſhed by its numerous fountains, and unmoleſted even by the mid-day ſun, you may at one view command the whole of it. In this ſpacious and well furniſhed garden I frequently amuſed myſelf in renewing my acquaintance with a ſcience which I had formerly ſtudied with delight; and whenever the profeſſer gave lectures to his pupils, I conſtantly attended. My firſt elements I had learned under docter Hope, who, as a botaniſt had acquired fame; but I muſt confeſs, that the method of Ortega appeared to me ſuperior; and I am perſuaded that his pupils, with moderate abilities, cannot fail to be proficients in this ſcience.

He not only expects them to come prepared, and able to inveſtigate each plant, ſo

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as to trace it from claſs to order, genus, ſpecies, and variety, but he teaches them to draw up generic deſcriptions for themſelves.

The merit of the maſter will ſoon appear in the productions of his pupils, who, with M. *Dombéi*, have travelled over Spaniſh America, and are preparing to favour the world with their diſcoveries.

Such a purſuit, in the abſence of the court, proved an agreeable reſource, and, with the library of the Carmelites, helped to occupy my attention in both a pleaſing and profitable manner.

At intervals, I walked about the town to obtain a general idea of it, before I deſcended to particulars. In my own mind I divided the whole into three portions, correſponding to three periods, eaſy to be diſtinguiſhed. The moſt ancient is neareſt to the river Manzanares, with narrow and contracted ſtreets, crooked lanes, and blind alleys, like thoſe ſtill viſible in London, but more eſpecially in Paris, where no extenſive conflagration hath conſumed the rude monuments of art, erected by the remote progenitors, who inhabited the infant city.

To

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To the north and to the eaſt of this, as you remove further from the river, the ſtreets are wider, and the buildings affect ſome degree of ſymmetry. This portion, including the *Plaza Mayor*, or ſquare, which in its day muſt have been a ſtriking object, terminates at the *Puerta del Sol*. But when Philip II. removed his court, and Madrid became the capital of his vaſt empire; the great nobility erected palaces beyond the former limits, and the *Puerta del Sol* is now the centre of the whole.

It is curious to trace the origin of cities. The ſhepherd pitches his tent, or builds his mud-wall cottage by the river ſide, becauſe he cannot afford to ſink a well; but man, being a gregarious animal, others, for the comfort of ſociety, or for mutual protection, reſort to the ſame ſpot, and build as near to him as poſſible. Cottages increaſe, tillage ſucceeds, manufactures follow, and the inhabitants, advancing both in number and in wealth, wiſh to enlarge their habitations; but the ground being occupied, they have no other choice, but to raiſe their houſes higher. Whilſt inhabiting the humble cottage, they never complained

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plained for want of light or air; but now that they exclude each other's light, they wonder that their anceſtors ſhould thus have cramped themſelves for want of room.

Madrid has fifteen pariſhes, ſeven thouſand three hundred and ninety-eight houſes, thirty-two thouſand ſeven hundred and forty-five families, and one hundred and forty-ſeven thouſand five hundred and forty-three individuals, ſixty-ſix convents, ſixteen colleges, eighteen hoſpitals, five priſons, and fifteen gates built of granite, moſt of which are elegant. The principal arch of the Puerta de Alcala is ſeventy feet high, and the two lateral ones are thirty-four, all well proportioned. It is by Sabatini, and does credit to his taſte.

In looking for good pictures I began with *los Carmelitas deſcalzos*, taking for my guide the excellent works of Antonio Ponz, and of Raphael Mengs. In the ſacriſty are found ſome works of the beſt maſters; of Titian, Vandyke, Rembrandt, *Coëllo*, *Ribera*, Jordan, *Murillo*, *Zurbaran*, and of André Vacaro. The clauſtre is by *Velaſquez*.

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The church and convent of S. *Franciſco de Sales* were built in the reign of Ferdinand VI. A. D. 1750, and here we ſee his monument, by Sabatini, with that of his queen, Barbara of Portugal. The dome and the arches were painted by the three brothers *Velaſquez*. The great altar has ſix Corinthian pillars of green marble, like the verde antique, from Sierra Nevada, near Granada, of ſingle blocks, each ſeventeen feet high; the baſes and the capitals are braſs gilt. There are ſome tolerable pictures by Francis de Muro, and Cignaroli. The treaſures of this convent are conſiderable.

The church of S. Paſqual has the Viſitation, by Jordano; St. Stephen, by Vandyke; Chriſt ſcourged, by Alexander Veroneſe; a pope, by Titian; a holy family, by Leonardo da Vinci; Pope Gregory, St. Ignatius Loyola, and F. Xavier, by Guercino; the Adoration, by Paul Veroneſe; John beheaded, by Mich. Angelo Caravaggio; and five others by *Ribera*.

The church of *S. Iſidro*, which belonged formerly to the jeſuits, ſtrongly marks the character of that ſociety, not only by its ſize, but by the taſte which appears both in

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in the building and its ornaments. In my opinion it is the moſt elegant of any I have ſeen, ſince I left Zaragoza.

The pictures, although not of the firſt maſters, are yet not to be deſpiſed.

The great church of *S. Franciſco* is admired by the beſt judges; but to me the vaſt dome and the Grecian arches, wholly deſtitute of ornaments, appear unfiniſhed, naked, cold, and void of taſte.

The day after my arrival, near the Puerta del Sol, looking for the *Calle de la Montera*, without Spaniſh enough to enquire the way, a gentleman, who ſaw my difficulty, ſpoke to me in Engliſh, and deſired to know, what ſtreet I wanted. Upon being informed, he conducted me to the houſe, where I was going, and, when he took his leave, invited me to dine with him. This gentleman was Don Franciſco Eſcarano, one of the poſtmaſters general, who, in return for civilities received in this country, when he was ſecretary to the embaſſy, thinks he can never do too much for any Engliſhman, who needs his aſſiſtance. Not ſatisfied with thus marking his attention, he conducted me to the king's palaces

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palaces at Madrid; and, as long as I remained in Spain, he never loſt an opportunity of rendering me ſubſtantial ſervices.

The palace of the *Buen Retiro* is a vaſt pile of buildings, very ancient, long deſerted, and, when I ſaw it, verging to decay. It contains ſome ſpacious apartments, in which there ſtill remain ſome few good pictures; but the three things, which gave me moſt ſatisfaction were, the theatre, the great ſaloon, and the equeſtrian ſtatue of Philip IV. This ſtatue, caſt by Pedro Tacca, of Florence, from a painting of Diego Velaſquez, and ſaid to weigh nine tons, is ſupported by the hind legs alone. I never ſaw nor can conceive any thing more perfect, or which appears ſo animated, as this prodigy of art.

The theatre is vaſt, and opens into the gardens, ſo as to make them, upon occaſion, a continuation of the ſcene. Here Ferdinand VI. frequently amuſed the public with operas, of which his queen was extravagantly fond.

The great ſaloon, called *el Caſon*, with its antichamber, painted in freſco by Luca Jordano, remains a monument of his taſte, invention, judgment, and imitative powers.

In

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In the principal compartiment of the roof is repreſented Hercules giving the golden fleece to Philip the Good, duke of Burgundy. In a ſubordinate compartiment, Pallas and the Gods are ſeen ſubduing the Titans; anſwering to which, the majeſty of Spain appears ruling the terreſtrial globe. The reſt is filled up with allegorical figures, finely expreſſed. The antichamber contains the Conqueſt of Granada. From the great ſaloon we go to the garden, by a little oval cabinet, covered entirely with looking-glaſs, in the ceiling of which is repreſented the Birth of the Sun, with people of all nations worſhipping the riſing deity, whilſt the prieſts are engaged in offering ſacrifices. This likewiſe is by Jordano.

I ſaw one apartment, which is ſeldom ſhewn to foreigners, containing models of ſtrong places; among theſe the two moſt ſtriking are Cadiz and Gibraltar.

The gardens of this palace are extenſive, and have a pleaſing variety of wood and water. Had I been to fix upon a ſituation for the royal reſidence, I ſhould have choſen this in preference to that, in which the new palace ſtands; but there may be,

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perhaps, objections, which do not preſent themſelves to the tranſient obſerver.

The palace called *Caſa del Campo* has few things worthy of attention. Here is an equeſtrian ſtatue of Philip III. begun by Juan Bologna, and, after his death, finiſhed by Tacca his diſciple; it reſembles that of Henry IV. at Paris. Here alſo is the original of the famous Temptation of St. Anthony, by Calot.

It is impoſſible to view the new palace without the moſt exquiſite delight. It preſents four fronts, each of four hundred and ſeventy feet in length, and one hundred feet in height up to the cornice, incloſing a quadrangle of one hundred and forty feet. Theſe fronts are relieved by numerous pillars and pilaſtres, and over the cornice is a baluſtrade to hide the leaden roof. The north front has five ſtories, beſides the entreſols and underground apartments.

With the baluſtrade, on pedeſtals, are placed a ſeries of the kings of Spain, from Ataulfo to Fernando VI. The plan is ſomewhat ſingular. On the principal floor is a ſuit of apartments, large and elegant, which

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which communicate all round the palace, receiving light from the fronts, and inclosing rooms for the domeſtics, which have light from a ſpacious gallery within. This gallery runs all round the quadrangle, over an open portico, or piazza, and is covered by a terrace.

The foundation of this edifice was laid in the year 1737, three years after the old palace had been conſumed by fire; and to prevent the like accident in future, the whole is upon arches.

The moſt ſtriking feature in this palace is the audience chamber, *ſallon de los reynos*, which is a double cube of ninety feet, hung with crimſon velvet, and which, with its ſumptuous canopy, and painted roof, makes a moſt magnificent appearance.

The paintings of the ceilings are by Tiepolo, Giacuinto, Bayeu, Velaſquez, Maella, and Mengs. It is not poſſible to view the Apotheoſis of Hercules, in the hall of converſation, and of Trajan, in the king's dining room, without feeling ſingular pleaſure and delight. In the execution of theſe pieces, Mengs exerted all his powers, and ſeems to have found no difficulty

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in executing what his imagination had conceived. Eaſe and elegance every where prevail. In theſe two delightful ſubjects we cannot readily determine, which we ſhould moſt admire, his deſigns, his lights and ſhades, his colouring, his invention, or his compoſition; for here he ſeems equally to deſerve praiſe for all: he wants however, in my opinion, that expreſſion, in which his favourite Raphael excelled.

It would be unpardonable to paſs over this ſuperb collection of pictures without ſome kind of detail. I ſhall therefore begin with the king's apartments:

In his antichamber there is, by

Baſan, an Adam; a Noah; Orpheus; and ſix others.

Paul Veroneſe, Adonis ſleeping.

Rubens, four of Hercules; one of Philip III.

Tintoret, Judith and Holophernes; St. Urſula martyred.

Titian, Siſyphus; Prometheus; three of Venus; and Adam and Eve.

Velaſquez, Philip III. Philip IV. their two wives, and Olivares, all on horſeback. I doubt whether five ſuch horſes, ſo perfect,

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perfect, and ſo full of animation, were ever ſeen together; the horſe of Philip IV. riſes from the canvas, and ſeems ſo much like real life, that, if properly placed, I am perſuaded an acute eye might be eaſily deceived.

In the king's converſation room, into which he retires with the foreign miniſters the moment he has dined, there are, by

Titian, Charles V. on horſeback; Philip II; Europa; Adonis.

Vandyke, Don Fernando.

Velaſquez, Donna Maria de Auſtria.

In the king's dreſſing room, by

Guido, an Aſſumption.

Luca Jordano, Iſaac; Flight into Egypt.

Mengs, a Nativity.

Murillo, The Annunciation; the Virgin and Joſeph; a Sacred Family; Jeſus and John, as infants.

Ribera, Elſpagnoleto, the Virgin and Mary Magdalene; John the Baptiſt.

Velaſquez, Argos; Vulcan at his forge, with the Cyclops and others.

Some by *Teniers* and by *Titian*.

In the king's private cabinet are more

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than twenty of *Teniers*, and one of *Waverman*.

In the antichamber of his bed-room is a Holy Family, by *Jordano*, and one by *Mengs*.

In his bed chamber are eight by *Mengs*, among which are, the Agony in the Garden; the Taking down from the Croſs; and, Chriſt appearing to Mary.

In the firſt apartment of the Infanta there are many by *Jordano* and *Lanfranc*; two children, by *Guido*; Virtue and Vice, by *Paul Veroneſe*; a portrait, by *Vandyke*; and two beautiful Cattle Pieces, by *Velaſquez*.

In the ſecond antichamber are, by

Carlo Maratti, two women with flowers.

Jordano, Jacob and Eſau; Bathſheba.

Lanfranc, two pieces.

Titian, St. Margaret.

In her dining room there are nineteen by *Jordano*.

In her great hall there are, by

Jordano, four, taken from the hiſtory of Solomon.

Rubens, A Prieſt; a Dance; and one more.

Titian,

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Titian, Charles V. and Philip II.

Velaſquez, four pictures of diſtinguiſhed merit.

In her bed room, Peter in Priſon, by *Guercino*; St. Anthony of Padua adoring the Child Jeſus, by *Carlo Marat*; and the Seizing of our Lord, by *Vandyke*.

In the apartments of the prince and princeſs, are ſeven pieces by *Jordano*; the Child Jeſus diſputing with the Doctors in the Temple, by *Paul Veroneſe*.

Of *Rubens*, the Rape of Ganimede; Marſias and Apollo; the Centaur in a robe of the wife of Perithous; Saturn; Apollo; Narciſſus; the Holy Children.

In their cabinet there are, by

Albert Durer, his own portrait, and the Death of the Virgin.

Baſan, The Adoration of the Kings; the Nativity; and, the Agony in the Garden.

Corregio, Chriſt clothed by his Mother; and Chriſt praying in the Garden.

Leonardo de Vinci, the Holy Children playing with a lamb; and one more.

Paul Veroneſe, Moſes taken up by Pharaoh's daughter.

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Pouſſin, a Landſcape.

Raphael, a Holy Family; and a Virgin with her ſon.

Rubens, two landſcapes; four heads; and ſix ſmall pictures.

Titian, Children playing round a ſtatue of Venus; and a Bacchanal with a woman ſleeping; both aſtoniſhingly fine. Rubens copied theſe, or rather, if the expreſſion may be allowed, he tranſlated them into Flemiſh. The thoughts remain, but the eaſe and the elegance are loſt. Surely nothing ever equalled the originals; the eye is never tired of viewing them.

In the prince's dreſſing room are, by

Andrea Sacchi, the Nativity of the Virgin.

Andrea Vacaro, five pictures of St. Cayatan.

Jordano, a Conception; and the Death of the Virgin.

Eſpanoleto, or Joſeph Ribera, ſometimes called El Spagnoleto, a Magdalene; St. Benito; St. Geronimo; and St. Bartholomew.

Mengs, a Nativity.

Murillo, a Holy Family.

Rubens,

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Rubens, a Virgin and Child.
Titian, Ecce Homo; and a Stabat Mater Dolorosa.
Vandyke, a Magdalene; and two of St. Rosalia.
Velasquez, a landscape with two hermits.

In their dining room there are, by
Brughel, some good pictures.
Espanoleto, a Conjurer.
Coypel, Susanna accused by the Elders.
Paul Veronese, a Susanna.
Rubens, Achilles discovered by Ulysses.
Tintoret, Judith and Holofernes.
Titian, seven pictures.
Vandyke, a Woman.
Velasquez, the Marquis of Pescara.
Woverman, Landscapes.

In the apartment of the Infant don Gabriel, there are seven pieces by *Jordano*; three by *Espanoleto*, and a Charles V. by *Titian*.

In the apartment of don Antonio there are three by *Jordano*.

In the apartment of the Infant don Louis were, by
Guido, Jesus bearing his Cross.
Paul Veronese, Eleazer and Rachael.

Rubens,

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Rubens, St. George and the Dragon; the Centaurs; Progne giving to Tereus his ſon Itis to eat; Diana; Archimedes; Mercury; Hercules and the Hydra; Apollo and Pan; the Rape of Proſerpine; the two copies from Titian, before mentioned, of the Bacchanals, and of the Children playing round the ſtatue of Venus. Had the originals been loſt, theſe would have been much admired.

Vandyke, the infant don Fernando; and ſome others.

What has been ſaid may ſerve to give a faint idea of this ineſtimable collection; in viewing which, this obſervation naturally preſents itſelf, that as far as relates to imitation of nature, the Spaniſh painters are not behind the firſt maſters of Italy and Flanders; whereas, in point of light and ſhade, and what has been called aëreal perſpective, which is only the modification of theſe, *Velaſquez* leaves all other painters far behind him.

Joining to the palace is a houſe called Caſa de Reveque, in which are ſhut up the following pictures: by *Guido*, Hippomanes and

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and Atalanta; by *Annibal Carrachi*, a Venus with Adonis and Cupid; by *Paul Veroneſe*, the ſame ſubject, a ſmaller ſize; and by *Titian*, five pictures, in each of which is a naked Venus.

By *Rubens*, the Rape of the Sabines; Diana bathing; a Bacchanal; a Perſeus and Andromeda; Juno, Pallas, and Venus, all full ſize.

Near to this is the royal armoury, which is well arranged; the armour is ancient, yet very bright, and well preſerved; it is an epitome of Spaniſh hiſtory. The moſt conſpicuouſly placed is the armour of Montezuma.

When I had in ſome meaſure ſatisfied my curioſity in viewing the pictures, I began to turn my attention towards the manufactures; but more eſpecially to that of nitre, or ſalt-petre, which in this city has employed ſome thouſands of the inhabitants in ſummer, and many hundreds in the winter.

In my way to this, on Saturday, May 27, paſſing through the gate of St. Barbara, I viſited the tapeſtry manufactory, which reſembles, and equals in beauty, the gobe-

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lins, from whence it originally came. I found a Frenchman at the head of it, who was civil and communicative. This fabric was brought into Spain, and eſtabliſhed here under the direction of John de Van Dergoten, from Antwerp, in the year 1720. They now employ fourſcore hands, and work only on the king's account, and for his palaces, making and repairing all the tapeſtry and carpets which are wanted at any of the *Sitios*, or royal reſidences.

Every one knows themethod of working tapeſtry; that the chain is perpendicular, the harneſs over their heads, and the picture by which they work, behind them; that they work with bobbins, and preſs down the thread with a little ivory comb.

In making their carpets, they have three coarſe-ſpun threads lightly twiſted together, which they weave into the chain with their fingers, ſo as to tie, and then cut off the thread about a quarter of an inch in length. This they find to be much better than the ancient method, ſtill retained in England, of weaving on the cutting knife; and their work, they ſay, is conſiderably ſtronger.

From thence I proceeded to the ſalt-

petre

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petre works, where at every ſtep I was confounded, and at a loſs which to admire moſt, the wiſdom of the Creator, and the ſecret paths in which Nature is conſtantly proceeding with her work, or the folly of the miniſter, who eſtabliſhed this manufacture at Madrid.

The perſon from whom I took my information was a Frenchman, who found employment here becauſe of his ſkill, acquired in other works of a nature ſimilar to theſe.

I obſerved a large incloſure, with a number of mounts of about twenty feet high, at regular diſtances from each other. Theſe he told me had been collected from the rubbiſh of the city, and the ſcrapings of the highways. I examined them with a minute attention, and found nothing remarkable, but ſmall fragments of gypſum in great abundance. They had remained all the winter piled up in the manner in which I found them. At this time men were employed in wheeling them away, and ſpreading abroad the earth to the thickneſs of about one foot; whilſt others were turning what had been previouſly expoſed to the influence of the ſun and of the air.

He

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He told me, that the preceding ſummers theſe heaps had been waſhed, and that being thus expoſed, they would yield the ſame quantity of ſalt again, and that, as far as he could judge, the produce would never fail; but that, after having been waſhed, no ſaltpetre could be obtained without a ſubſequent expoſure. He thought Madrid, on all accounts, improper for ſuch a manufacture; and ſaid, that from his own obſervations, he was inclined to think, they could not make ſaltpetre for eight reals, that is, nearly twenty pence a pound.

My curioſity was excited to the higheſt degree by this account, which ſeemed to offer violence to the moſt eſtabliſhed principles of chemiſtry. I determined therefore to loſe no opportunity of paying attention to this buſineſs, and with that view, procured an introduction to the gentlemen, who had the direction and control of it. With them I examined a much more extenſive work at the gate *Atocha*, near the general hoſpital. They informed me, that the number of men employed was commonly about fifteen hundred, but for ſome ſhort intervals, near four thouſand. This latter number agrees well enough with the abbé

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abbé Cavanilles, who ſtates them at four thouſand. According to their account, they have had this manufacture only a few years, and have now collected earth ſufficient to laſt for ever. Some of this earth they can lixiviate once a year, ſome they have waſhed twenty times in the laſt ſeven years, and ſome they have ſubjected to this operation fifteen times in one year, judging always by their eye, when they may waſh it to advantage, and by their taſte if it has yielded a lixivium of a proper ſtrength. When it is too weak, they paſs it over freſh earth till it is ſtrong enough for boiling. Moſt of the earth they uſe is common earth, and they are of opinion that all the earth in the vicinity of Madrid contains ſome nitre. When the earth has been a proper time expoſed, they put it into large earthen pans, ranged in a row, of the ſame form with thoſe uſed by ſugar-bakers to refine their ſugars, being a cone inverted, with the apex truncated; at the bottom of which they put a bit of eſparto matting covered with aſhes, to prevent the earth from falling through. On this they keep pouring water as faſt as it filters, till it will yield no more lixivium. As the liquid filters

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filters it falls into a drain, which conducts it to a ciſtern. From hence it is pumped up into the furnaces, which are abſurdly deep, and by a fierce fire is evaporated ſufficiently for the ſalt to cryſtallize. The ſalt thus obtained is a mixture of nitre and ſea ſalt. To ſeparate theſe, they uſe the common proceſs. It is well known that muria, or ſea ſalt, is ſoluble in three times its weight of water, either hot or cold; but nitre requires only one-ſixth of its weight, if the water is boiling, whereas, if it is cold, the water muſt be ſix times the weight of nitre, to diſſolve it perfectly. Hence it is evident, that on cooling, the nitre will be the firſt to cryſtallize; this however requires repeated operations before the nitre is thoroughly refined, and fit for market. The director and comptroller both aſſured me, that the ſaltpetre did not ſtand the king in more than two hundred reales a quintal, and that he ſold it for five hundred, getting a clear profit of three hundred reales by every quintal, which he made. They ought to know; but I ſuſpect that in their calculation there is ſome miſtake.

Not ſatisfied with this account of gains by a royal manufacture, and in ſuch a ſituation,

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ation, I went once more to examine ſome inferior officers, both in the upper and the lower works, at the two gates, S. Barbara and Atocha. I found ſome in each, who were ſufficiently communicative; and this was the reſult of my inquiries. At the upper works, ſince the war, they have employed one hundred men in winter, and more than three hundred in the ſummer; they have four furnaces, and have made upon the average, about four thouſand arrobas of refined ſaltpetre in the ſeaſon. At the lower works, they employ commonly in the winter three hundred men, and in the ſummer above one thouſand, but occaſionally they have had twice theſe numbers. With this ſtrength, and with twenty-five furnaces commonly at work, they have refined thirty thouſand arrobas of ſaltpetre; and they gueſs the ſea ſalt at ten thouſand arrobas. To heat their furnaces they uſe vine branches, for which they give one real per arroba, or two pence halfpenny for twenty-three pounds and one quarter.

Theſe are the facts: let us ſtop one moment to examine them; at preſent, not as philoſophers and chemiſts, but as mer-

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chants and politicians. If we allow the *quintal* of four arrobas to be equal to ninety-three pounds Engliſh, which is what the merchants reckon it, and the *real* to be worth two pence halfpenny, we muſt conclude that the king of Spain makes his ſalt-petre for five pence farthing; and it is clear that he ſells it for thirteen pence farthing per pound: but if, at the upper works, we allow one hundred men in winter, and three hundred in the ſummer, or two hundred on the average, at fifteen pounds per annum each, and ſay that they refine one thouſand quintals of ſalt-petre, we ſhall find that the labour alone comes to ſeven pence three farthings a pound, without allowing any thing for wear and tear of utenſils, for ſalaries, and above all for fuel. When a man conſiders, that not only in the firſt, but in every ſubſequent operation for refining the nitre, ſix pounds of water muſt be evaporated for one pound of the ſalt produced, and that twenty-three pounds and one quarter of ſuch weak fuel as vine branches ſtands in two pence halfpenny, although, without the aſſiſtance of Mr. Watt, he may not be able by calculation preciſely to point out the

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the quantity of fuel, ſuppoſing the evaporation to be conducted upon the moſt approved principles; yet every man may ſee, that the expence muſt be enormous. Taking all theſe things into conſideration, I am inclined to think, that the king of Spain does not make his nitre for twenty pence per pound. As for the ſea ſalt, I have not taken that into the account, becauſe in Spain it has little value, except that which it has acquired by carriage; and indeed with us in England, as in France, the principal part of its price ariſes from the duty, which is impoſed upon it. The king of Spain ſells his nitre at thirteen pence halfpenny per pound; and if it coſts him twenty pence he gets nothing by the bargain. But ſuppoſing he might make a profit by the ſale; yet, if he ſells it to himſelf, I know not where he is to look for gain; and if he compels his ſubjects to be the purchaſers, he is guilty of oppreſſion; he lays ſnares to catch the merchants, and he gives encouragement to ſmugglers.

The Eaſt India Company, when it is refined, ſell ſalt-petre in the Engliſh market for £. 2. 4s. 6d. the cwt. which, deducting

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ſeven ſhillings and three pence, the draw-back on exportation, is a ſmall fraction under four pence a pound, and the company would no doubt be happy to contract with Spain for leſs. In Bengal, as I am informed by one, who was thirty years in the trade between China and that country, ſaltpetre, before the Eaſt India Company undertook to make it on their own account, ſold for four rupees the bag of 160 pounds, which, at 2*s.* 6*d.* the rupee, would be exactly three farthings a pound; but in fact the rupee is intrinſically worth only one ſhilling and ten pence, and by the company is reckoned two ſhillings and three pence.

The foundation of this difference in the price of the production between Bengal and Madrid muſt be obvious to every one, who conſiders that the evaporation, which is effected in the latter by the force of fire, may be carried on in the former without expence, by the ſun and by the air.

Of all places, Madrid is the moſt improper for ſuch an extenſive manufacture; where they have long winters; where proviſions, labour, fuel, are all at a high price; where the court reſides; and where they have

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have no navigation. If this manufacture were eſtabliſhed in the ſouth of Spain, near to a navigable river, none of theſe objections would have place; the ſun and air would aſſiſt the evaporation, or completely finiſh it, as we ſee daily in their ſalt works on the borders of the Mediterranean; the little fuel which might be needful would find its way to them; and the nitre would be eaſily tranſported for the ſupply of diſtant markets: but even there it ſhould not be adminiſtered on the ſovereign's account; becauſe, with every advantage of ſituation, the monarch muſt be a loſer, where the private adventurer would contrive to gain.

I have no doubt that motives of benevolence may have contributed to keep this voracious monſter at Madrid, and the apprehenſion, that were it not cheriſhed and ſupported, a multitude, which is now fed by their attendance upon it, would be reduced to famine. Of all employments for the poor, that which is moſt uncertain is the leaſt deſirable; and little is that to be encouraged, which in ſummer decoys them from the harveſt, and from the works of huſban-

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dry, and, when the winter comes, turns them adrift, to remain inactive till the return of ſpring. Theſe objections remain in force againſt the manufacture of ſalt-petre at Madrid, which feeds four hundred only in the winter, and when they ſhould liſten to the calls of agriculture, employs from thirteen hundred to four thouſand. If theſe are not wanted for the labours of the field, and can find no conſtant work in profitable fabrics, it is plain that they have needleſsly been drawn into exiſtence, and that the population ſhould be ſuffered to ſink gradually till it has again found its proper level.

I have dwelt upon this ſubject, and treated it thus copiouſly, and puſhed the concluſion as far as it will go, becauſe the principle, which is thereby eſtabliſhed, is of great importance to mankind, and yet ſeems to have been little underſtood.

I tried to obtain admiſſion to the china manufacture, which is likewiſe adminiſtered on the king's account, but his majeſty's injunctions are ſo ſevere, that I could neither get introduced to ſee it, nor meet with any one who had ever been able to procure

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that favour for himſelf. I was the leſs mortified upon this occaſion, becauſe from the ſpecimens which I have ſeen, both in the palace at Madrid and in the provinces, it reſembles the manufacture of Séve, which I had formerly viſited in a tour through France.

I enquired alſo for the manufacture of gold and ſilver ſtuffs, of which Uztariz makes mention; but I could not find the leaſt veſtige of it. He tells us, that this eſtabliſhment was made in the year 1712, with peculiar privileges, and with the beſt encouragement. Each loom was allowed one quintal of ſilk, with wine, oil, and ſoap, of each ten arrobas (232½ pounds) per annum, free of all duties; and the ſtuffs in their firſt ſale were to enjoy the ſame exemption.

When I began to think of going to the court, I was for a time diverted from my purpoſe by the kindneſs of my friend Don Caſimir Ortega, who introduced me to Count Campomanes, governor of the council of Caſtille. We called firſt at his houſe, but not finding him at home, we went to a ſociety, founded

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A. D. 1738, called *Academia de la Hiſtoria*. It meets at the *Panaderia*, or *Caſa Real*, in the Plaza Mayor, and he is the preſident.

The Plaza Mayor, in the year 1612, when it was finiſhed, muſt have excited admiration; it is four hundred and thirty-four feet by three hundred and fifty-four, and much too high for theſe dimenſions.

In the Caſa Real, built A. D. 1674, are ſome good apartments, looking to the ſun, now given up to the ſecretary of this ſociety. They have a good collection of books, manuſcripts, and medals. They are employed upon the hiſtory of Spain, and have beſtowed uncommon labour and attention in aſcertaining both its geography and chronology. It is here, that on all ſolemn occaſions the royal family aſſembles to ſee the bull feaſts.

When we arrived, the ſociety was meeting. Among thoſe, to whom I was introduced, was a man advanced in years, appearing, at firſt view, of a forbidding aſpect and ungracious in his manner. He ſaid nothing to me, but turned himſelf round, and took up a book. Soon after this, I ſaw him take the chair, and found that this was

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was Count Campomanes. How I ever got reſolution to viſit him I cannot conceive; but contrary to my expectation I found him eaſy of acceſs, condeſcending, gracious, kind, friendly, and obliging to the laſt degree. It is poſſible that his goodneſs to me may have made me partial in my judgment of him; but, in my opinion, few kingdoms can boaſt his equal for underſtanding, knowledge, and benevolence. He appears to me one of the moſt ſuperior characters that have adorned his country, and one of the beſt patriots that ever gave inſtruction to a riſing nation.

It muſt be confeſſed, that my firſt introduction to him was awkwardly conducted, and for want of information, my ſubſequent viſits, I can readily ſuppoſe, might appear ill timed to him. He had the goodneſs to make me promiſe, that I would come to him the next day, but did not name the hour. In the afternoon I went, but the porter told me he was not at home. I ſaid that I came by appointment. He then told me, that his excellence was aſleep, this being his time for taken the *ſieſta*, but that I might go up and wait. I went up into a large hall, where I found many ill dreſſed people waiting,

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waiting, but no domeſtic. Here I continued for a time; but, upon obſerving ſome genteel viſitors going through this hall, I followed them into the next apartment, where I found a page writing at a table. Here I ſtopped, and took a chair. After a time I enquired if his excellence was awake. The page left me, and in about ten minutes came back and conducted me into the council chamber, where I found him in his bed-gown and white night-cap walking with thoſe gentlemen, who had paſſed through to him without aſking any queſtion of the page. The count received me with the greateſt goodneſs, and led me into his cloſet, where I had the happineſs of enjoying his converſation more than two hours. He invited me to come to him, whenever it ſhould be agreeable to me, and deſired that, without reſerve, I would apply to him, whenever I wanted either information or protection. Fearing I might break in upon his time, which I knew muſt be exceedingly valuable, becauſe no miniſter in any kingdom has ſo much buſineſs paſſing through his hands, I returned no more till I was about

to

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to make an excurſion to the north. I then called about two hours later than before, and, without aſking any queſtion, I walked up, and went directly to the council chamber. Here I found two gentlemen waiting, who had been announced, After a few minutes his door opened, and he came in, when, for the firſt time, I diſcovered that he was near ſighted in the extreme. When he had ſpoken to them, he enquired if any body beſide was in the room. Upon this I preſented myſelf, and was perfectly ſatisfied with my reception. As I had ſeen his chariot waiting at the door, I ſoon made my bow, and left him. After I became better acquainted with the manners in Spain, I had, on my return from my northern expedition, much more comfortable enjoyment of his ſociety, and, inſtead of breaking in upon his time, either when he had buſineſs to diſpatch, or when he was at his fieſta, or when he wiſhed to take the air, I uſed to aſſemble with his friends, after the buſineſs of the day was over, when I never failed to meet with the moſt cordial reception. If I happened to go to him too early, he had the goodneſs to forgive

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forgive me, and would often dictate to his page, and at the same time keep up the conversation with me.

Before I left him, he made me tell him what I had seen, and finding that I had not visited his favourite establishment, he recommended me to see it. This was the academy of the ennobled arts. The next morning I presented myself in his name to Don A. Ponz, the president, a man of taste and judgment in the arts, who conducted me through all the numerous and magnificent apartments, which have been given up to this useful institution. In the evening, I returned to see the pupils at their work, when I had the pleasure to find 280 boys engaged in drawing, twenty employed in architecture, with thirty-six modelling in clay, some from casts, and others from a living subject. Every month prizes are distributed to stimulate their diligence. This academy, like that which I have described at Barcelona, is open to the whole world, and every thing is provided for the pupils at the king's expence.

The cabinet of natural history is accessible to all; there is no need to wait for

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tickets, but at the appointed hours any perſon, who is decent in his appearance, is admitted to walk round the rooms, and to examine what he pleaſes, as long as the doors are open. If he is peculiarly devoted to one branch of natural hiſtory, he is not hurried away from that with the gaping multitude, and compelled to ſpend the allotted portion of his time in apartments, which contain nothing to his purpoſe. This circumſtance, gave me peculiar pleaſure, becauſe my chief attention has ever been to minerals.

The collection of the king of Spain is truly magnificent, but far from being well-choſen, or well arranged. For intrific value in ſilver, gold, and precious ſtones, perhaps no cabinet ever equalled this; but for ſcience, I had rather be maſter of the more humble collections of Mr. Charles Greville, or of M. Beſſon.

Among the large maſſes of native gold, I could not diſcern one cryſtal; and as for thoſe of ſilver, they appear to have been valued chiefly for their weight.

The large cryſtals of ſulpher from Conil mine, near Cadiz, are well preſerved, but like

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like moſt other ſubſtances of the mineral kingdom in this cabinet, they are in too great abundance. Every ſhelf is loaded with duplicates upon duplicates without end.

The ſpecimen, which moſt attracted by attention, was a large rock, containing forty emeralds, in the form of hexagonal priſms, ſome near an inch diameter, and one inch and an half in length, and many of the fineſt water, without the appearance of a flaw. I wiſhed for the privilege of taking away thoſe only, which had been abſurdly cemented on this rock; my cabinet would have been much enriched by the acceſſion of theſe beautiful cryſtals, and the rock itſelf would have recovered its more graceful, becauſe more natural ſimplicity.

The collection of tins was exceedingly defective, and among theſe I obſerved two palpable miſnomers. Theſe were two dodecaedral garnets placed among the tin cryſtals, each with the tin mark upon it, one in the hand writing of M. Davila, the other of the merchant from whom he purchaſed it.

The extraneous foſſils are exceedingly confuſed; requiring to be purged, and well arranged.

The

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The animals are beautiful, and in high preſervation.

The foundation of this collection was laid by M. Davila; but I apprehend that after he had publiſhed his much admired catalogue, the beſt of the ſpecimens were picked and culled, and that the refuſe only were carried to the king of Spain, who made the purchaſe, and appointed him firſt director of his cabinet.

The ſcience of natural hiſtory is almoſt new in Europe. Sir Hans Sloane led the way in England, Buffon followed, and Davila brought up the rear. It is but of late years that the ſovereigns of Europe have taken this ſcience under their protection. England began, and Spain has followed the example.

Should Izquierdo, the preſent director of the Spaniſh cabinet, bend his mind to natural hiſtory, I may venture to ſay, that all the other cabinets in Europe will ſoon be left far behind; but I fear, that his great talents will place him in ſome more exalted ſtation. His ſtrong underſtanding, quickneſs, and penetration, his univerſal knowledge, and his unwearied application, mark

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mark him out for the finance; and there, I apprehend, his ambition leads him. I met with him in Paris, where the moſt flattering offers had been made to him; but he choſe rather to return to Spain, his native country.

In M. Clavijo, the vice director of the cabinet, I found a ſenſible man, and a moſt agreeable companion, well informed on every ſubject to which he had turned his thoughts, hoſpitable, generous, polite, and always ready to oblige. Bred in the civil departments of the ſtate, his ſervices on the death of Davila, and the promotion of Izquierdo, were rewarded by this appointment to the cabinet. Upon hearing me praiſe the emeralds I had ſeen, he adviſed me to procure admiſſion to a private cabinet, belonging to the marquis of Sonora, miniſter of the Indies. I followed his advice, and got my friend don Caſimir Ortega to conduct me to his houſe. Here I was perfectly aſtoniſhed at the beauty of his emeralds, ſuperior to any I had ſeen for luſtre and for ſize. He had likewiſe good ſpecimens of gold and ſilver, with artificial birds in filigree, from the Eaſt Indies, which

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which muſt give pleaſure to all who can admire the works of art. This collection is valuable, but the marquis moſt evidently had no taſte for ſcience, and was ſolicitous, not to acquire knowledge, but to increaſe his treaſure.

In the evening, I directed my courſe towards the Prado, which, at this ſeaſon of the year, is much frequented: my objects of purſuit had been ſo many and ſo various, that I could ſpare but little time for this refreſhing grove; but now, having finiſhed all my work, I walked as long as I could ſee.

The coaches were numerous, and the walks were crowded; all was in motion; when ſuddenly, about eight in the evening, on the tolling of a bell, I was much ſurpriſed to ſee all motion ceaſe; every coach ſtood ſtill, every hat was off and every lip ſeemed to utter prayer. This I afterwards found to be the cuſtom all over Spain. If the affections of the heart correſpond with the external ſigns of piety in Spain, and if the moral conduct anſwers to the affections of the heart; this people muſt be the moſt heavenly-minded, and the moſt virtuous

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people upon earth. But all is not gold that glitters; and I had ſoon an opportunity of forming a conjecture, that all who thus moved the lip were not to be reckoned among the friends of piety and virtue. When the prayer was over, the coaches began to move ſlowly on once more; but ſoon after this they went briſkly off, and, the multitude diſperſing, left a number of young women, attended by young men, who from that time ſeemed to be more at eaſe, yet, notwithſtanding, kept within the bounds of decency.

I have obſerved all over Spain, that the leading principle is, never to give offence. People may be as vicious as they pleaſe; it may be notorious that they are ſo; but their manners muſt be correct. This regard to decency certainly deſerves the higheſt commendation.

At Madrid, the hotels are good. They have no table d'hote; but every one dines in his own apartment, where he is ſerved with two courſes, each of four or five diſhes with a deſert, and one ſuch courſe for ſupper, with plenty of good wine, for which he pays ſeven livres and an half a day,

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day, including lodging; but if he eats no ſupper, then his dinner and his two rooms will coſt him only five livres, or four and two-pence Engliſh.

Having, for the preſent, ſatisfied my curioſity at Madrid, *June* 2, I went with M. Izquierdo poſt to Aranjuez, ſeven leagues, which we performed in about three hours. In the way from Barcelona, ſeven leagues with ſeven mules had been a long day's journey. In compariſon with that ſlow motion, we ſeemed to fly.

All the way we ſaw only gypſum rock wherever the rock was to be ſeen.

The road is perfectly well made, wide, ſtrait, and planted on each ſide with elms. The country almoſt a dead flat. In this ſhort ſpace we left the Manzanares, with its canal; croſſed the Jarama, with which that canal communicates; touched the Tajuña, and came to the Tajo, which we call the Tagus.

After dinner I preſented myſelf to our miniſter, Mr. Liſton, and the day following I went with him to deliver my letters to count Florida Blanca, the prime miniſter.

His excellency received me graciouſly,

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and told me, that whilſt I remained in that kingdom, I had only to inform him, what I wiſhed, and it ſhould be done for me. He is a little man, and, if I may judge by his eyes, exceedingly hypochondriacal; but he has a look of benevolence, and, if his countenance does not deceive me, he has more than a common ſhare of underſtanding. His manners are poliſhed, and his addreſs is pleaſing.

Sunday, *June* 4, I went to court to ſee the king and all the royal family at dinner; then dined at Mr. Liſton's, where I met Sir Alexander Monro and general O' Neil; and at five in the evening I went to Añover, three leagues from Aranjuez, to paſs a few days with my friend Don Caſimir Ortega.

Whoever goes to Aranjuez ſhould take care to fill his purſe, and he may be certain that he will ſoon find it emptied. For a ſingle mule in a volante I paid fourſcore reales, which is ſixteen ſhillings and eight pence, to go theſe three leagues. For one miſerable bed-room you muſt give eight ſhillings and four pence a day; and if you do not quit early in the morning, you are charged four ſhillings and

two

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two pence for the half day. Yet with all theſe heavy charges, the inn-keepers are not unreaſonable, becauſe they have but a ſhort harveſt, in which they are to make up their rent; beſides which, the expence being ſo exceedingly oppreſſive, no one ever comes here but by neceſſity, and therefore they who are obliged to come, muſt bear the greater burden.

Añover, three leagues from Aranjuez, and four from Toledo, is built on the ſummit of a gypſum rock, commanding an extenſive plain, which is watered by the Tagus. It has four hundred houſes, and contains two thouſand ſouls; of which, fourteen hundred go to confeſſion, and receive the euchariſt; the remaining ſix hundred are under ten years of age.

The extenſive plain, through which the Tagus flows, reſembling the vale of Pewſey in Wiltſhire, is of vaſt extent, running eaſt and weſt. It is bounded to the north by a ridge of hills, on which this village ſtands, and beyond the river, to the ſouth, by diſtant mountains, yet of gypſum, and not like the Wiltſhire hills, of chalk. The ſoil of this vale, being ſand and clay to the

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depth of eight or ten feet to the level of the river, is rich, and its fertility is abundantly increaſed by the overflowing of the Tagus, which in winter leaves greater wealth behind than ever was collected from its golden ſands. In ſummer, water is ſupplied by norias, at little expence beſide that of labour. They had once a canal, made by Philip V. ſeven leagues in length, which brought to them the waters of the Jarama; but, about twenty years ago, the head proved faulty, and it has never been repaired. The loſs by this misfortune and neglect is almoſt ineſtimable. Some idea may however be formed by conſidering, that Añover alone has ninety norias, the expence of which would have been ſaved by the canal.

Behind the village, on the hills, there is a fruitful plain, whoſe ſoil is diſſolved gypſum, ſand, and clay. The plain is cut by innumerable ravins to a conſiderable depth, which diſcover the gypſum rock in horizontal ſtrata, with fine blue clay, very hard, and remarkable for ſmoothneſs, interpoſed between the beds of gypſum. This gypſum is moſtly cryſtallized, and is either ſolid,

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ſolid, ſtriated, ſtellated, lamellous, or in ſtalactites. In the ravins contiguous to the village, the poor have excavated little habitations, with each a chimney, and a narrow entrance by way of door; theſe are warm in winter, cool in ſummer, always dry.

The pariſh of Añover is a league and an half in length, and three quarters in breadth. It has one hundred and fifty proprietors of land, the repreſentatives of thoſe, by whom the country was recovered from the Moors, who are all freeholders, ſubject to no manerial rights, paying only two-tenths, one to the king, and the other to the church, each taken up in kind. As their eſtates are not entailed, induſtry is much encouraged. It is however much to be lamented, that the lands of each proprietor are ſcattered in ſmall parcels in the common field, which, after harveſt, is fed in common by all the pariſh flocks, ſo that they can not plough, nor crop, nor feed them to advantage.

Their courſe of huſbandry in the valley is, two years, barley; one year, wheat; and the fourth year, melons. Theſe are natu-

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ral to the ſoil, as appears by the *cucumis elaterium*, a native of this country. The crops are watered, and the produce of wheat is fifty for one; of barley, from ſixty to a hundred; which is nearly five times the average produce with us in proportion to the ſeed. Don Caſimir has for ſome years paſt been cultivating ſenna to great advantage: it is for the Engliſh market, and is much admired.

From the hills, and the extenſive plain beyond them, they obtain wine, olives, oil, and corn, chiefly wheat; all exceeding fine.

Their ploughs ſhew great ſcarcity both of timber and of iron; the beam is about three feet long, curved, and tapered at one end, to receive an additional beam of about five feet faſtened to it by two iron collars; the other end of the three foot beam touches the ground, and has a mortiſe to receive the ſhare, the handle, and a wedge. From this deſcription it is evident that the beam itſelf ſupplies the place of ſheets. The ſhare has no fin, and inſtead of a mould-board, there are two wooden pins faſtened near the heel of the ſhare.

As

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As in this plough the ſhare, from the point to its inſertion in the beam, being two feet ſix inches long, it is ſtrengthened by a retch. They have no other implements of tillage, being perfect ſtrangers to the uſe of harrows. It muſt be evident to every one, who has the leaſt knowledge of this ſubject, that no plough can be worſe adapted to the ſoil; and were the farmers to procure models from Barcelona, they would ſoon be convinced of this themſelves.

For cheeſe they never uſe the rennet, but in its place they ſubſtitute the down of the *cynara cardunculus*, a ſpecies of the wild artichoke, with which they make a ſtrong infuſion over night, and the next morning, when the milk is warm from the cow, they put nearly half a pint of the infuſion to thirty-two azumbres, or about fourteen gallons Engliſh meaſure.

Within theſe ten years they have eſtabliſhed a manufactory of *ſaltpetre*, highly intereſting to the chemiſt. To collect the earth moſt ſuited for their purpoſe, they go out early in the morning, and obſerve where the ground is wet, and changed to a dark colour, having been previouſly diſtinguiſhed for

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for its whiteneſs; this they bring home and waſh, after the ſame manner as at Madrid. Saltpetre being compoſed of nitrous acid with vegetable alkali, it has been imagined, that the aſhes uſed in making nitre contributed the latter; but here they employ only the aſhes of the tamariſk, which contain vitriolic ſalts; and, as the vitriolic acid has a ſtronger affinity to the vegetable alkali than nitrous acid, it muſt be evident, that both the acid and the alkali of the nitre have ſome other origin, receiving nothing from the aſhes.

After they have extracted all the nitre, they expoſe the earth to the influence of the ſun, and then find the ſame proportion of the ſalt, as if it had never been lixiviated before.

Near to this village, towards the bottom of a ravin, are two ſprings containing epſom ſalt, which, as the ſun evaporates the water, forms in beautifully white, ſpongy, and mamellous flakes. The ſame ſalt is ſeen efflorefcing from the gypſeous earth and clay above the ſprings. With the nitre is found ſea ſalt. Thus, in this elevated part of Spain, the vitriolic, the nitrous, and the

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the muriatic acids, with magnesia, the vegetable, and the fossil alkalis, all meet together in a manner never yet explored. When I come to Granada, I shall resume this subject, and collect such facts as appear to be connected with it.

The plants to be found here growing on the bare gypsum rock are, the Cistus halemifolius; Cistus helianthemum; Lepidium subulatum; Artimisia herba alba; Thymus zygis, used by the natives to prepare the olives; Teucrium capitatum; Statice retusa; Buphthalmum aquaticum, with which they make brooms; Marubium vulgare; Thapsia villosa; Peganum harmela; Carduus solstitialis; Francania levis; Sedum hispanicum; Francania pulvurulenta, thriving best on the saltpetre earth.

In the valley I found the following plants: Anchusa officinalis; Althæa officin.; Andreala integrifolia; Arundo phrag.; Adonis æstivalis; Aparine vulgare; Carduus acantoides; Carduus marianus; Chæmæmelumcotulâ aureâ; Centauria salmantica, used for making brooms; Crepis; Cucubalus behen; Cucumis elaterium; Cynara Cardunculus, used for turning milk;

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milk; Daucus viſnaga; Eringium commune; Echium vulg.; Echinops ſtrigoſus, which produces the Amadoux, with which they obtain light, as we do with tinder; Euphorbia ſerrata; Lepidium latifolium; Lycium Europæum; Lychnis; Malva rotundifol.; Ornithopus; Poliganum aviculare; Peganum harmela, the aſhes of which they uſe in Arragon for making glaſs; Rubia tinctorum; Salix alba; Salſola tragus; Salſola ſativa; Salſola Cali; Salſola fruticoſa; Tamariſcus gallica, which, when burnt, produces vitriolated tartar and Glauber ſalt.

The *Salſolas* are worthy to be noticed; becauſe they are commonly found on the ſea ſhores, within the influence of ſalt water. Their production in this valley will create no difficulty, if we call to mind the nature of the hills, and the quantity of ſalt which they contain.

Beef and veal ſell for ten quarts the pound of ſixteen ounces; mutton, twelve; bread, four and an half. Eight quarts and an half make a real vellon, or nearly ten farthings Engliſh. Labour in winter is four reales a day, in harveſt, five. If hired by the

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the year, they have forty-five reales a month, or about ſix pounds two ſhillings per annum, and their board,

Hitherto I had aſſociated only with thoſe, who were perfect maſters of the French language; but now the time was come, when I muſt begin to find my way without the aſſiſtance of interpreters. My firſt attempt, however, was attended with ſome difficulty. My friend, don Caſimir, made my bargain for a borrico, and a guide to convey me to Toledo.

Wedneſday, *June* 7, at break of day, I took leave of my hoſpitable friend, and put myſelf under the protection of my guide; with whom, not being able to converſe, I had the more leiſure to make obſervations by the way.

His attention ſeemed to be rivetted; but for a length of time I could not imagine what kind of object he was ſeeking, till at laſt, ſeeing a cloud of duſt aſcending from the vale beneath us, and obſerving that his eyes became more bright, and that he moved more lightly over the turf, I began to dive into his intentions, and to conſider how I was to avoid the cloud, which to him,

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him, as it appeared, had the moſt powerful attractives. We deſcended ſlowly down the hill, and when we were got into the valley, ſaw before us a drove of carriers, with their aſſes loaded, carrying gypſum to Toledo. Theſe were the friends and village companions of my guide, for whom he had been looking out, impatient of that ſilence which my ignorance of his language had impoſed on him. Smothered with duſt, I began to recollect all the Spaniſh I had ever heard, but could find no expreſſions, by which I could make him comprehend, that I was not pleaſed with our new companions; till at laſt I halted, let them get a head, beckoned my guide, and ſaid, with an angry tone of voice, pointing to his friends, "*No ſon mis amigos.*" This, repeated with energy, had a due effect, and from thenceforward I had a moſt comfortable ride.

Having deſcended into the valley, we ſaw no more gypſum, except two inſulated hills to the right, intirely compoſed of this ſubſtance, which in Spain ſeems almoſt every where to ſupply the place of chalk. Inſtead of gypſum we found clay, pure, and

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without viſible admixture, appearing from the ſummits of ſome ſwelling hills to their foundations; but as we advanced nearer to Toledo, we met with other hills, which even to the water's edge, on the banks of the Tagus, diſcovered only quartz, with the clay, evidently the produce of decompoſed granite, without the ſmalleſt veſtige of the mica or of the feld ſpat in maſs.

The ſituation of Toledo is remarkable. The Tagus, paſſing between two granite mountains, and almoſt ſurrounding one of theſe, forms a peninſula, on which the city ſtands, appearing at a diſtance like a cone.

Having paſſed the gate, we aſcended to the apex, and ſoon fell down upon a poſada, built by the archbiſhop at his own expence, and fitted up in the moſt commodious manner; in which are no leſs than forty-ſeven bed rooms, ſpacious, neat, and furniſhed with good beds. The price of every thing is fixed, and is very moderate.

From a dialogue which my young friend and travelling companion, the cadet don Nicolas de Llano Ponte, had compoſed for me, ſuppoſed to be between a traveller and his hoſt, I contrived to let my preſent hoſt know

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know that I ſhould dine there, and then took a walk to form a general idea of the city.

When I returned, I found all hurry and confuſion in the inn: a *gran ſeñor* had arrived ſoon after my departure, and occupied the whole attention of the *poſadero*, leaving me without hope of procuring any thing that day to eat or drink. This *gran ſeñor* was M. Cabarrus, the projector of the Spaniſh bank, who, with his friend Izquierdo, were come to ſurvey the river, for the purpoſe of a canal between this city and Madrid.

Nothing could be more opportune for me. I immediately joined company with them, and when they left Toledo, they transferred me to their friends, from whom I obtained all that a traveller can want, information and protection.

After dinner we began with viſiting the Alcazar, that reſidence of ancient kings, now the magnificent abode of poverty and wretchedneſs.

The north front is by Alonſo de Covarrubias and Luis de Vergara, who were employed by Charles V. The ſouth front is the work of Juan de Herrera. The quadrangle

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drangle is one hundred and ſixty feet by one hundred and thirty, and, with the great ſtair caſe, the gallery, and the colonnade, has an air of elegant ſimplicity.

When the court retired from Toledo, this palace was ſuffered to decay, till ſome lovers of the arts, mourning over the ruins of the once ſtately pile, had made repreſentations to the king, and urged him to repair it. In conſequence of theſe repreſentations the archbiſhop himſelf undertook the buſineſs, and having, at the expence of £,50,000. reſtored the Alcazar to its priſtine grandeur, converted it into an hoſpicio or general workhouſe for the poor. All the magnificent apartments are now occupied with ſpinning-wheels, and looms, and inſtead of princes they are filled with beggars. In theſe they work, and in the under-ground ſtory, which had been the ſtables, they have their dormitory.

The good archbiſhop here feeds ſeven hundred perſons, who are employed in the ſilk manufactory; but unfortunately, with the beſt intentions, he has completed the ruin of the city; for, by his weight of capital, he has raiſed the price both of labour

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and of the raw material, whilſt, by carrying a greater quantity of goods to the common market, he has ſunk the price of the commodity ſo much, that the manufacturers, who employed from forty to ſixty workmen, now employ only two or three, and many who were in affluence are now reduced to penury.

Theſe people are ſo far from earning their own maintenance, that over and above the produce of their labour they require forty thouſand ducats a year for their ſupport. If we reckon the ducat at 2*s.* 3½*d.* we ſhall find the ſum amount to ſix pounds ten ſhillings and a fraction for each pauper, which alone, without the aſſiſtance of their work, ſhould ſuffice for two of them. Of theſe forty thouſand ducats, the archbiſhop gives, in the firſt inſtance, twenty thouſand, and the church ſupplies the reſt; but having converſed with him upon this ſubject, I am much inclined to think, that he gives a great deal more. He certainly ſupplies the deficit; and with his vaſt revenue he is always poor.

From the univerſal experience of mankind I may venture to aſſert, that if the moſt

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moſt able ſilk manufacturer in Europe, who in the way of his profeſſion has acquired wealth, were to feed, to clothe, and to employ ſeven hundred people upon the ſame terms, either with theſe in the Alcazar, or with thoſe who belong to ſimilar eſtabliſhments in England, France, or Spain, he would ſoon be reduced to poverty. For health, for comfort, for profit, for population, let every family occupy a ſeparate cottage, and learn to live on the produce of its induſtry. For want of a right underſtanding on this ſubject, benevolence in England, France, and Spain muſt ſigh, and ſay, "When I would do good, evil is preſent with me." Such eſtabliſhments increaſe the evils they mean to remedy, and aggravate the diſtreſs they were intended to relieve.

From the Alcazar we went to viſit the royal manufactory of arms, with which I was much pleaſed. The ſteel is excellent, and ſo perfectly tempered, that in thruſting at a target the ſwords will bend like whalebone, and yet cut through a helmet without turning their edge. This once famous manufacture had been neglected, and in a

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manner loſt, but it is now reviving. Virgil ſays,

At Chalybes nudi ferrum, &c.

And naked Spaniards temper ſteel for war.

Georg. i. 58.

Diod. Sic. ſays, the Celtiberians give ſuch temper to their ſteel that no helmet can reſiſt their ſtroke.

The next morning I devoted to the cathedral, where I ſpent ſome hours agreeably. The building itſelf, the carving, the pictures, and the treaſures it contains, all attract and rivet the attention. This magnificent church is four hundred and four feet long, and two hundred and three feet wide; it has five ailes, and the higheſt of theſe is one hundred and ſixty feet. The choir is covered with carvings repreſenting the conqueſt of Granada, executed in a moſt ſuperior ſtile, by the two famous artiſts, Alonſo Berruguete, a diſciple of Michael Angelo, and Felipe de Borgoña. The eye is never weary of examining theſe monuments of their conſummate ſkill. Among the pictures are the works of the beſt maſters; of Rubens, Titian, Dominico Greco, Vandyke, Guido, Carlo Maratti, Eugenio Caxes, Vincente Carducho,

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Carducho, and Baſſano. In the library they have near ſeven hundred manuſcripts.

The treaſures of this cathedral ſtruck me with aſtoniſhment. *La Cuſtodia*, an elegant ſilver model of the cathedral by Enrique de Arfe, weighs twenty-two thouſand ounces, and took fifty-five ounces of pure gold for gilding. It contains a multitude of pillars, and more than two hundred little ſilver images of exquiſite workmanſhip. In the centre of this edifice is placed a ſhrine of maſſive gold, weighing fifty pounds; another, which occaſionally ſupplies the place of this, contains a ſtatue of the infant Jeſus made of pure gold, and adorned with eight hundred precious ſtones. In four ſeparate cloſets are four large ſilver images ſtanding on globes of ſilver, each two feet diameter, repreſenting Europe, Aſia, Africa, and America, with their ſeveral emblems, given by Anne of Newbourgh. The grand ſilver throne, on which is placed the Virgin, wearing a crown, and adorned with a profuſion of the moſt coſtly jems, weighs fifty arrobas, which, at twenty-five pounds the arroba, is equal to one thouſand two hundred and fifty pounds. In the chapel of the Virgin is an altar covered with gold and ſilver.

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It is evident that this profuſion of wealth has ariſen from the pious donations of the Spaniſh princes, out of the immenſe treaſures obtained from their gold and ſilver mines, on the firſt diſcovery of America. The value of theſe donations may be aſcertained with eaſe; but no pen can eſtimate, no figures calculate, no imagination can conceive, what would have been the value, what the produce of this wealth, if, inſtead of being thus buried, and, as far as relates to any uſeful purpoſe, loſt, it had been employed in making eaſy communications through the kingdom, by canals and roads, or in the improvement of the ſoil, by draining, by planting, and by watering, or in the eſtabliſhment, by premiums, and by loans, of uſeful manufactures, ſuited to the genius of the people and to the nature of the country. If that overflowing wealth had been diverted into profitable channels, what might Spain have been! Dicite pontifices, in ſancto quid facit aurum? We may venture to ſay that, if the gold and ſilver of America, inſtead of being buried in the churches, or, which is worſe, inſtead of pampering the pride, the prodigality, and the unprofitable luxury of the great, or, which is worſt of all, inſtead of being idly

ſquandered

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ſquandered in uſeleſs and almoſt endleſs wars, if all this gold and ſilver had been devoted to Ceres, Spain would have been her moſt favourite reſidence, and the whole peninſula would be one continued garden.

The revenue of this cathedral is, perhaps, not to be equalled by any church in Europe.

The archbiſhop has nine millions of reales a year, which, at two pence halfpenny per real, would be equal to ninety-three thouſand ſeven hundred fifty pounds ſterling; but we may with more accuracy ſay ninety thouſand; a revenue this fit for a ſovereign prince. Beſides the archbiſhop, there are forty canons, fifty prebendaries, and fifty chaplains. Of the canons, fourteen are dignitaries. The whole body of eccleſiaſtics belonging to this cathedral is ſix hundred, all well provided for. They were formerly regulars of St. Auguſtin, but they are now ſeculariſed.

I had the curioſity to hear maſs in one of the chapels, where they uſe only the Mozarabic Miſſal, which was compoſed by St. Iſidore for the Gothic church after their converſion from arianiſm to the catholic faith. This maintained its empire till the expulſion of the Moors, when the court

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introduced the Roman Miſſal, but at the ſame time, influenced by the lenity and good ſenſe of Ximenes, indulged the nobles and the clergy of Toledo with their own Miſſal. By degrees this was neglected, and almoſt forgotten, inſomuch that when I was there no one was preſent, but myſelf and the officiating prieſt.

No religious eſtabliſhment need be afraid of toleration, unleſs it be abſurd in the extreme. Ceaſe to perſecute, and all ſects will in due time dwindle and decay. They have the ſeeds of mortality in themſelves, and nothing but perſecution can prevent their diſſolution. When government has given its ſanction to one religion, and made proviſion for its prieſts; when with cool deliberation it has made choice of that, which appears to be the beſt, and has affixed its ſtamp, it has done its duty, and may ſafely leave the reſt to the good pleaſure of its citizens, or, if it interferes at all, it ſhould be to encourage competition, and by no means to eſtabliſh a monopoly.

In viſiting the town houſe, I was ſtruck with a beautiful inſcription on the ſtaircaſe, and took the pains to copy it. The affinity between the Spaniſh language and the

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the Italian is ſo viſible, that moſt people, who have any knowledge of the one, may, by the aſſiſtance of the French and Latin, underſtand the other. I ſhall, therefore, venture to give the inſcription without attempting a tranſlation. It is addreſſed to the magiſtrates of Toledo, and thus we read it:

Nobles diſcretos varones,
Que gobernais à Toledo,
En aqueſtos eſcalones
Deſechad las aficiones,
Codicias, amor, y Miedo.
Por los comunes provechos
Dexad los particulares:
Pues vos fizo dios Pilares
De tan riquiſſimos techos,
Eſtad firmes, y derechos

This famous city, once the ſeat of empire, where the arts and ſciences, where trade and manufactures flouriſhed, is now brought to ruin and decay, and kept in exiſtence only by the church. This city, which contained two hundred thouſand ſouls, is now reduced to leſs than twenty-five thouſand. The citizens are fled; the monks remain.

Here

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Here we find twenty-ſix pariſh churches, thirty-eight convents, ſeventeen hoſpitals, four colleges, twelve chapels, and nineteen hermitages, the monuments of its former opulence. Every ſtreet retains ſome token to remind the inhabitants of what their city was. They ſee many thouſand columns ſcattered about, each with "Sic tranſit" deeply engraved upon it.

The ſame deſolation has ſpread to the ſurrounding villages, which are not only reduced in number, from five hundred and fifty-one to three hundred and forty-nine, being a loſs of more than two hundred villages in one diſtrict, but the remaining villages are alſo reduced to leſs than one quarter of their former population, and the devaſtation extends ſo far that ſome of the moſt fertile lands are left uncultivated. This I can venture to affirm upon the beſt authority.

Two hundred and twenty years before the Chriſtian era, Hannibal added Toledo, with Caſtille, to the empire of Carthage. From them it paſſed under the dominion of the Romans, and continued in ſubjection till the reign of Eurico, the ſeventh ſovereign

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ſovereign of the Gothic line in Spain, who took poſſeſſion of this city about A. D. 467. In that line the ſceptre had continued more than 240 years, when the Moors entered Spain, encouraged by the weakneſs of a country, which, through the jealouſy of wicked ſovereigns, had been diſarmed, and made an eaſy prey to the firſt who ſhould invade it. In three years they overran the whole kingdom; and Toledo, although better prepared, than moſt other cities to make a vigorous reſiſtance, ſubmitted to its fate, A. D. 714. Alfonſo VI. a warlike prince, with the aſſiſtance of Rodrigo Diaz, ſurnamed the Cid, reſcued this city from the Moors A. D. 1085; but in leſs than fifteen years he loſt the famous battle of the Seven Counts, and with it the city. From this time to the final expulſion of the Moors, Toledo was the object for which moſt blood was ſhed; and even after that period, it had little time to breathe before it was vexed by new ſtorms.

The loſs of two able ſovereigns, of Iſabella, A. D. 1504, and of Ferdinand, A. D. 1516, with the total incapacity of their daughter Joanna, and the foreign educa-

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tion of their grandſon Charles, but more eſpecially the diſgrace and death of Ximenes, convulſed the Spaniſh empire in its whole extent. This diſtinguiſhed miniſter, like Richlieu in France, and Henry VII. in England, had curbed the power of the great feodal lords, had diveſted them of their uſurped authority, and, in the place of the anarchy and confuſion of diſtracted empire, was preparing to introduce a ſyſtem of wiſe and equitable government, which at once ſhould give ſtability to the throne, and protection to the weak from the oppreſſion of the ſtrong. By his advice, immediately after the conqueſt of Granada, Ferdinand, and Iſabella had applied themſelves ſeriouſly to this important buſineſs, revoking the grants of cities, caſtles, lands, penſions, and immunities, which had been extorted from the crown, encouraging appeals from the tribunals of the barons, and attaching to their own perſons, by a papal grant, the three great maſterſhips of Calatrava, Alcantara, and St. Iago, with all their cities, caſtles, and ſtrong places, uſually given to the nobles. After the death of Ferdinand, Ximenes, appointed regent of

Caſtille

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Caſtille during the minority of Charles, following up this plan, had courted the free cities, had armed the citizens, and by their means had kept the great nobility in awe; but when he fell, inexperience, weakneſs, and rapacity, taking the reins, ruined all his plans, and ſoon drove the people to deſpair. The citizens of Toledo were the firſt to take up arms, and the laſt to lay them down. They choſe for their general Don John de Padilla, a young nobleman of undaunted courage, but of no experience. All the cities of Caſtille followed the example of Toledo, and the rebellion, breaking out with violence, was conducted with a rage and fury peculiar to civil inſurrections. They neither ſhewed nor expected pity; but, to the utmoſt of their power, by the halter, by fire, or by the ſword, they deſtroyed the perſons and the property of all, who oppoſed their meaſures. The eccleſiaſtics, without heſitation, joined them, but the nobility obſerved a ſtrict neutrality. The motives by which theſe ſeveral orders in the ſtate were actuated will appear from the requiſitions of the *ſanta junta*, an aſ-

ſembly

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ſembly compoſed of deputies from all the cities. The principal were theſe:

1. The king ſhall reſide in Caſtille, or appoint a native regent.

2. None but natives ſhall hold offices in church or ſtate.

5. The repreſentatives of the people in cortes ſhall be paid by their own conſtituents, receiving neither place nor penſion from the crown, and ſhall chooſe their own ſpeaker.

7. The cortes ſhall be aſſembled once in three years, to conſult on public affairs.

8. The ſoldiers ſhall have free quarters only ſix days, and on a march.

10. The exciſe duties ſhall be reduced to what they were at the death of Iſabella.

11. All crown grants from that period ſhall be revoked, and all new offices ſhall be diſſolved.

14. All the privileges of the nobles, prejudicial to the commons, ſhall be revoked.

15. The government of cities ſhall not be in the hands of the nobles, nor ſhall the governors be paid by them.

17. The

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17. The lands of the nobles ſhall be taxed equally with thoſe of the commons.

18. No money ſhall be ſent out of the kingdom, nor ſhall it be granted by the crown before it has been raiſed.

20. The mayors ſhall continue in office only one year, unleſs the people deſire it; and they ſhall be paid by the treaſury, and not either by fines or forfeitures.

22. The goods of the accuſed ſhall not eſcheat till after ſentence of condemnation is pronounced.

25. No man ſhall be compelled to purchaſe papal indulgences.

By theſe requiſitions it is clear that the commons were ground as between two mill-ſtones, oppreſſed both by the crown and by the nobles; but for want of proper leaders they obtained no redreſs. Sometimes they made application to the throne with the moſt flattering offers; at other times they ſolicited the nobles to take part with them againſt the uſurpations of the crown, and held up to them a rod in caſe of their refuſal; but, whether they tried the force of promiſes to the king, or of threatenings to the nobles, theſe promiſes and threat-

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threatenings met together in one object, the reſumption of the crown lands.

The armies of the commons, every where defeated, were at length diſperſed; Padilla was beheaded, and Toledo alone remained obſtinate in its reſiſtance, encouraged by the example of Padilla's widow, who not only declared her own reſolution not to ſurvive the loſs of liberty, but urged them to avoid the eternal reproaches of poſterity, by tranſmitting to their children that freedom which they had received by inheritance from their progenitors.

The conduct and courage of this heroine might yet have retrieved their affairs, had not the court contrived to detach the eccleſiaſtics from the common cauſe. Deſerted by them, and deceived in their expectations by the nobles, the commons, no longer able to make reſiſtance, and having no alternative, ſurrendered the city by capitulation to the crown, (A. D. 1522). Thus ended a war which had been carried on with ſpirit two and twenty months, and thus the nobles in Spain, as in all other countries, rather than give liberty to the people, ſubmitted themſelves to receive the yoke.

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yoke. The whole nation has ſuffered by this change in the conſtitution of their government; but no order in the ſtate has loſt ſo much as the nobility. From being little leſs than ſovereigns, they are ſlaves, reduced to the loweſt ſtate of abaſement; mere cyphers, without weight, conſideration, influence, or dignity; not like lawful ſovereigns, dethroned yet unſubdued, the objects of moſt generous pity and compaſſion; but like ſome contemptible uſurper, when degraded and expoſed to the deriſion of the ſurrounding multitude.

It was not till A. D. 1529, that the univerſity revived, after the expulſion of the Moors. This ſeminary may be conſidered as the offspring of Salamanca, and although many diſtinguiſhed characters have been educated here, the daughter has never been equal in ſplendour to the mother. They have twenty-four profeſſors, and receive annually about four hundred ſtudents. The antiquated philoſophy of Ariſtotle maintains unrivalled empire here.

Before I turned my back upon this moſt intereſting city, I wiſhed to have aſcertained a fact which is reported by no con-

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temptible authority, but I wanted opportunity.

It is certain that the water of the Tagus at Aranjuez, paſſing between mountains of gypſum and ſal gem, is there very noxious; but at Toledo it is very good, and lathers well with ſoap. Mr. Bowles affirms, that below Toledo this water diſcovers no ſign, by any chemical proceſs, of either ſalt or gypſum. In confirmation of a theory which he labours to eſtabliſh, he relates another fact ſimilar to this. He ſays that after rain the river by Cardona (that high mountain of rock ſalt already mentioned) is ſo impregnated that the fiſh die; but that three leagues below the mount, neither by evaporation, nor by any other means, could he ever diſcover the leaſt particle of ſalt.

Theſe and ſimilar facts, if aſcertained, would point out a law of nature with which at preſent we are wholly unacquainted.

Proviſions are remarkably cheap at Toledo: beef, eight quarts; mutton, eleven; bread, five; labour, from September to May, four reales; the remainder of the year, four and an half.

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It muſt always be remembered, that eight quarts and an half make a real, which may be reckoned two pence half-penny ſterling, but in truth it is not more than $2\frac{25}{64}$ pence.

June 9, I left Toledo. The way from this city to Aranjuez is intereſting, as being a country evidently covered with decompoſed granite. In one part of the way we find the clay unmixed, but as we proceed, we ſee the quartz blended with the clay, whilſt the mica, as the lighter body, has been carried off. The vegetable tribes are nearly the ſame with thoſe already mentioned at Anover, with the addition of excellent liquorice growing wild. Near the river ſide is an extenſive wood of tamariſk. This part of the country is chiefly the king's demeſne, and is left uncultivated, given up to mules, although the land is rich, and, with proper tillage, would produce the moſt luxuriant crops. In one ſpot of low ſwampy ground is ſaltpetre in abundance, diſcernible to the taſte, and viſible to the eye, although it is far from any dwelling, and free from all diſtinguiſhable

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admixture of either gypſum or calcareous matter.

As we approach the *Sitio*, that is, the royal reſidence, we meet with a delightfully ſhaded road; and, after traverſing a ſcorching plain, feel refreſhed by the vapour ariſing from the water, with which a double row of elms is kept in conſtant vigour.

Aranjuez, at this ſeaſon of the year, is a moſt enchanting reſidence. The palace is not ſuperb, but it has the look of comfort; and the garden, watered by the Tagus, is beautifully laid out, without the leaſt appearance of affectation, but natural, and ſuited to the climate, which requires cloſe walks, and, of courſe, great ſimplicity. It is extenſive, and, by that circumſtance, aided by the ſize of the elms, which are, without exception, the largeſt I ever ſaw, it has an air of magnificence, but that kind of magnificence which conſults only pleaſure. The Cyprian goddeſs, with her little train, might have choſen this for one of her moſt favoured ſpots; but native beauty is here confined to the vegetable kingdom; few of her nymphs are to be found in this part of Spain.

The

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The corps diplomatique ſeem to enjoy themſelves more in this retreat than at the other ſitios; they are near together; they give good dinners; they have frequent balls; and, from day to day, they have one continued round of pleaſant amuſements.

In this ſequeſtered ſpot, we meet with none but men of the moſt poliſhed manners, well informed of every thing that is paſſing in the world, and with the moſt accompliſhed women, all cheerful, gay, and lively. The refinements of a ſelect ſociety like this were ſo powerfully attractive, that I laid by the pen, I cloſed my books, and, from morning to night, had agreeable engagements. I came here with Izquierdo, expecting to have explored the mountains in this vicinity with him; but the moment we left the chaiſe, we parted; he lived with the miniſters, I with the corps diplomatique. A few days after my excurſion to Añover, we met; when, like another Mentor, he awakened my attention to the chief object of my journey, ſaying, "My "friend, we muſt quit this place, and re- "turn to the more rugged paths of ſci- "ence: this kind of life is not ſuitable to

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" us." Thinking however ſome relaxation needful, and finding the ſociety at Aranjuez, although cheerful, not unprofitable, I determined to prolong my ſtay.

Here I often met one of my travelling companions, the tall French colonel, looking exceedingly dejected; his gloom was manly, yet increaſing daily, it ſeemed at laſt to border on deſpair. Part of his eventful hiſtory had eſcaped from him on the journey, the reſt I collected from his friends. A Frenchman ſerving in the Spaniſh army is ſufficient to beſpeak misfortune. His was an affair of honour, not uncommon among the officers in France, in which he had killed his colonel. Without loſs of time he fled, and, being of a good family, he was ſtrongly recommended to the Spaniſh court, where, as a brave officer, he met reſpect. Wherever he ſerved, his conduct was admired; and had he been either diſcreet or fortunate, he muſt have riſen high in his profeſſion. His perſon and addreſs were graceful, his underſtanding ſtrong, and well informed, but for want of prudence, his ambition was ſacrificed to his love of pleaſure. As a man of gallantry, with ſuch accompliſhments, his empire

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empire muſt have been extenſive: his vanity was flattered; but if he felt attachment, it was for one, from whom he had nothing to expect, but what the warmeſt affection could beſtow. With her he ſpent every thing he had, and having exhauſted his credit in Barcelona, where his regiment was quartered, he procured an exchange with an officer who was going to Mexico. No ſooner was this arrangement unalterably fixed, that his friend and patron, general O' Neile, was appointed governor of Zaragoza, where he would have been ſoon provided for. This circumſtance he felt ſeverely, and this, together with a painful ſeparation, his load of debt, his want of credit, his approaching journey, and long voyage, without money in his purſe, or any reſources but in his wit, was ſufficient to depreſs the higheſt and the moſt independent ſpirit. Had the duke de la Vauguyon known of his diſtreſs for caſh, he would have offered his aſſiſtance; but this man was born to be unfortunate. To complete the whole, he had not been ten days at ſea, before news arrived, that the viceroy of Mexico, to whom he had the ſtrongeſt recommendations, was dead.

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A man may chooſe his ſituation, but this once choſen, it is the ſituation which moſt frequently makes the man.

Te facimus, fortuna, deam, cæloque locamus.

Soon after my return to Aranjuez, I had the honour to dine with the prime miniſter, Count Florida Blanca. The company conſiſted of the foreign miniſters, who are invited every Saturday, and his under ſecretaries. This aſſemblage may appear incongruous, but it is not ſo; becauſe theſe gentlemen, having been well educated, and trained up in the various civil departments of the ſtate, and from thence diſpatched into foreign countries as ſecretaries of the embaſſy, where they learn the language, and acquire knowledge, they have higher claims than thoſe, who have ſimilar employment in the other courts of Europe. When they return to Spain, conſidered as ſervants of the public, they are received into the various offices, and have each his ſeveral department, one France and England, another the Italian courts, where they aſſiſt in expediting buſineſs. To them a foreign miniſter can explain at leiſure, with clearneſs and with freedom,

in

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in his own language, all that he wiſhes to have diſtinctly ſtated to the prime miniſter. From this office they are commonly promoted to ſome honourable and lucrative employment, as the reward of their long ſervices.

I was ſtruck with the elegance of the dinner, in which there was great variety, yet every thing was excellent; and had I been to form a judgment of the count, merely from the arrangement of his table, I ſhould have pronounced him a man of ſenſe. It is an old, and perhaps a well-founded obſervation, that no man is fit to govern an empire who cannot give a dinner to his friends.

The manners of the count are eaſy and polite, ſuch as evidently mark the ſchool in which he has been trained, diſtinguiſhed not by familiarity but by the moſt pleaſing attentions.

At the beginning of the dinner, I was much ſurpriſed to hear myſelf addreſſed in Engliſh by the favourite ſervant of the count, who brought me a diſh, telling me, "you will find this excellent." Out of compliment for his civility, I helped myſelf,

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ſelf, but had no ſooner began to eat, than he brought me a ſecond; and in like manner a third and fourth. It ſeems Canoſa, for that was his name, had been a Spaniſh meſſenger, and having received civilities in England, he was happy to remember them. As long as I continued in Spain, he never loſt an opportunity of paying me attention, and of rendering me every ſervice in his power. His good will is courted by the whole corps diplomatique, becauſe he not only can procure for any one an audience, in preference to all others, but can give the beſt advice as to the time and ſeaſon of demanding one. It is natural for the foreign miniſters to underſtand this matter; but the grandées, proud, haughty, and unbending, wait for admittance, or, wearied with attendance, go away without having been able to obtain it. I ſaw one of the old nobility ſitting thus unnoticed in the antichamber, and I am credibly informed, that whilſt they are attending, men of little conſideration are inſtantly admitted to the count, and going away are ſucceeded by others, who have no greater pretenſions than themſelves to this diſtinguiſhed favour.

But

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But under a deſpotic government, the great lords muſt ſubmit to be treated with contempt. If they will be reſpected, they muſt be free; and if they will be free, they muſt be contented that the people ſhould be ſo too; becauſe liberty, if not equally extended to every order in the ſtate, muſt in time be loſt. This truth, founded on obſervation, and confirmed by the experience of all nations, is a truth of all others the leaſt pleaſing to the great; a truth, the force of which is ſeldom felt till it comes too late to be of ſervice.

As ſoon as dinner was over at the count's, coffee was called for, and the company diſperſed. The Spaniards went to their ſieſta, and I wandered about till Mr. Liſton did me the honour to introduce me at the Dutcheſs of Berwick's, where a pleaſant party conſtantly aſſembled to drink tea and ſup, when there was no ball; for all the time the court was at Aranjuez, the Dutcheſs de la Vauguyon gave two a week, and the Dutcheſs of Berwick one.

At a ball, to which I was invited by the former, I had the happineſs to ſee Madame Mello dance a volero. Her motions were

ſo

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ſo graceful, that whilſt ſhe was dancing ſhe appeared to be the moſt beautiful woman in the room; but ſhe had no ſooner retired to her ſeat than the deluſion vaniſhed.

This dance bears ſome reſemblance to the fandango, at leaſt in ſprightlineſs and elegance; but then it is more correct, than that favourite, yet moſt laſcivious pantomime. The fandango itſelf is baniſhed from genteel aſſemblies, and juſtly ſo. As danced by the vulgar, it is moſt diſguſting: as refined in higher life, covered with a moſt elegant yet tranſparent veil, it ceaſes to diſguſt; and, from that very circumſtance, excites thoſe paſſions in the youthful breaſt, which wiſdom finds it difficult to curb. This dance muſt certainly come to them by tradition from the Moors. The muſic of it has ſuch a powerful effect on young and old, that all are prepared for motion the inſtant the inſtruments are heard; and, from what I have ſeen, I could almoſt perſuade myſelf to receive the extravagant idea of a friend, who, in the warmth of his imagination, ſuppoſed, that were it ſuddenly introduced into a church or into a court of judicature, prieſts and

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people, judges and criminals, the graveſt and the gay, would forget all diſtinctions, and begin to dance.

One night, after a ball, as I was going to my hotel, on turning a corner, I ſaw at a little diſtance a gentleman entering through a window, but not upon the ground floor, whilſt his friend, or confidential ſervant, was on the watch below. Without knowing what I was doing, I ran up towards him; but, upon better recollection, I made off as quick as poſſible, happy in having eſcaped the dagger, which my imagination painted as prepared to keep off all intruders.

The motions of the court are nearly uniform from day to day.

Whilſt at Aranjuez the king commonly amuſes himſelf with fiſhing till the middle of the day, when he returns to dine, like every other branch of the royal family, in public. After dinner, follows a ſhort converſation with the foreign miniſters, which being finiſhed, they retire to the garden; and he, accompanied by the prince, leaving the palace about three or four in the afternoon, goes twenty or thirty miles to ſhoot, following his ſport as long as he can ſee.

The

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The two infants, don Gabriel and don Antonio, either for the ſake of health, or to keep them out of miſchief, are obliged to go a ſhooting to ſome other diſtrict, and this every day. If they return early enough, they mount their horſes, and attend the princeſſes in their evening ride.

The old faſhioned courtiers dine at half after one, immediately on returning from the palace, but the more modern, at two o'clock, and the foreign miniſters between that and three.

In the evening, after the fieſta, the princeſſes, attended by their guards, the grandées, and ſome of the foreign miniſters, enter their coaches, and move ſlowly on, ſaluting each other as often as they paſs.

By the ſide of this long extended mall, is a pleaſant walk, well filled with company, and in which the princeſſes occaſionally walk. If they are on foot; the whole company follows in their train: when paſſing in their carriages, all ſtand ſtill to make their bow; and the cloak, which was flung looſely back, or held up, or tucked under the arm, and the flap, which was caſt negligently over the left ſhoulder, is let fall, and hangs like the undertaker's

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dertaker's cloak, when walking at a funeral. It is pleaſing to ſee the genteel young Spaniard in his *capa*, which he throws into a thouſand graceful forms, each remarkable for its peculiar eaſe and elegance, ſuch as no foreigner can imitate; but when he meets a perſon of ſuperior rank, or when he goes into a church, eaſe and elegance are baniſhed by decorum, and this *capa*, ſo much to be admired, degenerates into the ſtiffneſs and formality of a cloak.

The Spaniſh ladies diſcover the ſame taſte in wearing the *mantilla*, a kind of muſlin ſhawl, covering both the head and ſhoulders, and ſerving the various purpoſes of the hood, of the cloak, and of the veil. No foreigner can ever attain their eaſe, or elegance, in putting on this ſimple dreſs.

In the Spaniſh women the mantilla appears to have no weight. Lighter than air, it ſeems to ſupply the place of wings.

One evening, when this public walk was thronged with ladies, many of whom were richly dreſſed; on the tinkling of a little bell at a diſtance ſcarcely to be heard, in one moment all were upon their knees.

Upon

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Upon aſking a lady what was the matter, ſhe told me, that *his majeſty* was paſſing. Had I enquired of a Frenchman, he would have ſaid, "C'eſt le bon Dieu qui paſſe." Her look pointed me to the ſpot, where two ladies of faſhion, well known, and highly valued by all foreigners who have viſited Madrid, had quitted their carriage to the hoſt, which the prieſts were carrying to ſome dying chriſtian. Had it been the rainy ſeaſon, they muſt have done the ſame; and had the public walk been even wet and dirty, none would have been excuſed from kneeling.

The heat, towards the middle of June, became exceedingly troubleſome; and, notwithſtanding the many allurements of this delightful ſpot, made me pant for ſome cool retreat. But, before I quitted a place, to which I might never more return, I determined to explore the environs.

The country is divided into vallies by long chains of gypſum mountains, running nearly eaſt and weſt, or north-eaſt and ſouth-weſt. One of theſe vallies is occupied by the *Calle de la Reyna*, a beautiful plantation of lofty elms more than two miles

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miles in length. At the end of this I turned to the right, and climbed the mountains, where the royal deer range unreſtrained by either bounds or fear, except when they ſee the king approaching.

I returned from my walk through the town to ſee the amphitheatre for the bull feaſts, and the new convent which the king's confeſſor has made him build for the monks of his own order.

Another morning I walked with Mr. Liſton to ſee a *cortijo*, or farm, of ſome hundred acres, belonging to the king. His majeſty has two ſuch near Aranjuez; but this, they ſay, much exceeds the other. The vines are here all of the choiceſt kinds. Some idea may be formed of its expected produce, by the dimenſions of the cellars, of more than fifteen thouſand feet in length, beſides other conſiderable ranges intended to receive the juice of the grapes, flowing in copious ſtreams from two ſtrong preſſes. The olives, produced here in great abundance, are preſſed by conical iron rollers, elevated above the ſtage or floor, round which they move on two little margins, to

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prevent the bruiſing of the ſtones. The olives are carefully picked, and are preſſed as ſoon as they are gathered. By this attention, the oil is not inferior to the beſt of Italy or France.

In Spain they have few preſſes in proportion to their quantity of olives, and for this reaſon, as well as to obtain the greater produce, they leave the fruit in heaps till they ferment and rot; hence the oil grows rancid and ill-flavoured; beſides, the preſſing of the kernels is certainly not advantageous to the oil. The Spaniſh oil being, for theſe reaſons, inferior in its quality, is conſumed chiefly by the natives, either at their tables or in making ſoap. Where morals are not concerned, it is happy for human nature, that the taſte is under the influence of cuſtom, ſo as by habit to approve and chooſe what once it loathed and rejected with abhorrence. From this circumſtance it is, that the Spaniards are not merely contented, but pleaſed, with the peculiar flavour of their oil, and prefer it to the pureſt which ever came from Lucca. This they condemn for its perfect inſipidity.

All

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All the buildings of this vineyard are upon a ſuperior ſtile, and are executed, not only in the moſt ſubſtantial manner, but with much taſte. Nothing can exceed in beauty the extenſive range of arbours, covered entirely with vines, ſo as at mid-day, under a moſt ſcorching ſun, to yield a refreſhing ſhade.

In point of economy I fear little can be advanced in favour of theſe eſtabliſhments, becauſe, to ſay nothing of the immenſe ſums expended and buried in the earth, it can not be imagined, that, as a royal vineyard, the wine will ever pay the labourers employed upon it.

This cortijo is incloſed by a parapet wall with paliſadoes, and is ſurrounded by a deer park. The valley itſelf, not above one mile in width, is bounded to the ſouth by gypſum hills, and to the north by mountains apparently of the ſame nature. It is watered by a canal from the Tagus.

Beyond this, to the north, is another valley, where the Tajuña flows.

The gypſum of this country is productive of ſea ſalt, and of Epſom ſalt, both found cryſtallized, and abounds with nitre,

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appearing every where at noon, in white efflorescence on the surface, and before sun-rise in black spots. The gypsum is in horizontal strata. The tamarisk seems to be fond of gypsum: it abounds every where in this neighbourhood, and is peculiarly luxuriant on the borders of the Tagus.

In the vicinity of Aranjuez we see buffalos yoked in pairs, either ploughing the land, or drawing heavy loads upon the highways.

The Spaniards, when the sun gets high, all retire to their houses, and exclude, as much as possible, the light; but a foreigner can only learn wisdom by his own experience. By wandering all the morning on the mountains, nature with him must sink, and his strength must fail; but returning with a keen appetite, exhausted, he sits down to a table plentifully furnished with whatever is most excellent in its kind; he eats heartily; he drinks freely; he feels his strength recruited; he sleeps profoundly; and, finding his spirits more than commonly elated in the morning when he awakes, he felicitates himself upon the enjoyment

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joyment of ſuch health, as he never before experienced; but when, good eaſy man, he thinks full ſurely, that he is wiſer than the natives, he is ſoon convinced of his raſhneſs; and finds, when it is too late, that he has been feeding the flame, which is to conſume him.

The day before my departure from Aranjuez, I had the ſatisfaction of ſeeing a pageant peculiar to this country. It is called the *Parejas*. The prince of Aſturias, with his two brothers, the infants don Gabriel and don Antonio, attended by five and forty of the firſt nobility, all in the ancient Spaniſh dreſs, and mounted on high bred Andaluſian horſes, performed a variety of evolutions to the ſound of trumpets and French horns; forming four ſquadrons, diſtinguiſhed from each other by the colour of their dreſſes, which were, red, blue, yellow, and green. They executed this figure dance with great exactneſs, and made an elegant appearance.

When I left Aranjuez, it was computed, that there were collected in it not leſs than ten thouſand ſouls; but no ſooner is the court departed, than it becomes a deſert.

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Sunday, 18 *June*, in the evening, I returned to Madrid, and the next morning I attended at the bull feaſt.

The amphitheatre is three hundred and thirty feet diameter, and the arena, two hundred and twenty-five. It is ſaid to contain fifteen thouſand ſpectators; but I doubt the truth of this aſſertion.

The feaſt is preſided by a magiſtrate, attended by his two alguazils, to regulate the whole, and to preſerve order in the aſſembly.

At the appointed moment, immediately on a ſignal from the magiſtrate, two folding doors fly open, and a bull ruſhes furiouſly into the arena; but, upon ſeeing the aſſembled multitude, he makes a pauſe, and looks round, as if ſeeking ſome object on which to ſpend his rage. Oppoſed to him he ſees a *picador*, mounted on his horſe, armed with a lance, and coming on to meet him. As they draw near, they ſtop, then move a few inches, ſurveying their antagoniſt with a fixed attention, each in his turn advancing ſlowly, as if doubtful what part to take; till at length the bull, ſtooping with his head, and collecting all his

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his ſtrength, ſhuts his eyes, and with impetuoſity ruſhes on his adverſary. The picador, calm and recollected, fixing himſelf firmly in his ſeat, and holding the lance under his right arm, directs the point of it to the ſhoulder of the raging animal, and turns him aſide: but ſometimes he is not able to accompliſh this.

One bull ruſhed upon the lance, and riſing almoſt upright upon his haunches, broke it to ſhivers; then with his forehead, as with a battering ram, he ſmote the picador on the breaſt, beat him down, and overthrew the horſe. Inſtantly the *chulos*, active young men, with little cloaks or banners, diſtracted his attention, and gave the horſeman an opportunity to eſcape. When he was retired, a ſecond picador, armed like the former, offered battle to the bull. Fluſhed with conqueſt, the furious beaſt ſprung forward; but being with dexterity diverted by the lance, he returned to the charge before the horſe could face about, and fixing his horn between the thighs, toſſed him in the air, and overthrew the rider. The *chulos* again appeared, and the man eſcaped, being relieved by

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the firſt picador, who had again entered the arena, mounted on a freſh horſe. To this animal the firſt attack was fatal, for the bull avoiding, by a ſudden turn, the lance, pierced the cheſt, and ſtruck him to the heart.

Sometimes the bull tears open the belly of the horſe, the rider is thrown upon his back, and the poor wounded creature runs about with his bowels trailing on the ground. In one morning I ſaw thirteen horſes killed; but ſometimes there are many more. Theſe animals have ſo much ſpirit, that the rider can make them face the bull, even when they have received their mortal wound.

When the bull, finding his antagoniſt conſtantly remounted, will no longer make battle, the *banderilleros*, or *chulos*, are let looſe upon him. Theſe are eight young men, each with a bundle of *banderillas*, or little arrows, in his hand, which he is to fix into the neck of the bull; not however attacking him from behind, but meeting him in front. For this purpoſe they provoke him to attack them, and when he is preparing to take them on his horn, at the very

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very moment that he makes a little ſtop, and ſhuts his eyes, they fix their banderillas, and eſcape. If they cannot bring him to this point, they preſent the *moleta*, or little ſcarlet banner, always carried in their left hand, and provoking him to puſh at that, paſs by him. When he turns quick upon them, they place their confidence in flight; and, to amuſe him, they let fall their moleta. This very often is ſufficient; he ſtops to ſmell at it, then tramples it under foot; but ſometimes with his eyes fixed upon the man who let it fall, he follows with ſuch velocity, that the banderillero can ſcarcely leap over the fence, before he is overtaken by the bull. I have ſeen bulls clear this fence almoſt at the ſame inſtant with the man, although it is near ſix feet high. Beyond this fence there is another, at the diſtance of about five feet, which is conſiderably higher, to protect the ſpectators, who are ſeated immediately behind it; yet, I have been credibly informed, that bulls have ſometimes leaped with ſuch amazing force, as to clear both theſe fences, and fall among the benches.

When he has made battle for about

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twenty minutes, his time is come, and he muſt die. This certainly is the moſt intereſting moment, and affords the beſt ſubject for a picture. The matador appears, and ſilent expectation is viſible in every countenance. With the left hand he holds the moleta, in his right hand, the ſword. During the combat, he has been ſtudying the character of the bull, and watching all his motions. If this animal was *claro*, that is, impetuous and without diſguiſe, the matador draws nigh with confidence, certain of a ſpeedy victory; but if he was cautious, circumſpect, and crafty, if he was cool and recollected, ſlow in forming his reſolutions, but quick in their execution, he is called *obſcuro*, and before him even a veteran will tremble. The matador draws nigh, views him with a fixed attention, and endeavours to provoke him, but in vain; or, having provoked him, makes his lunge, but is eluded by the watchful animal, who inſtantly becomes aſſailant, and the champion flies; he flies, but he looks back upon the bull, that he may know how to regulate his flight. One of theſe, called Pepillo, was ſo active, and poſſeſſed ſuch recollection, that

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that when purſued, and near the barrier, at the very inſtant when the furious animal had cloſed his eyes to toſs him, he put his foot between the horns, and with this borrowed motion, cleared the fence, and came down upon his feet.

Whilſt I was in Spain, two matadors were killed at Cadiz. They were brothers. The firſt by ſome misfortune met his fate; the ſecond, ruſhing forward with brutal fury, thirſting for revenge, haſty and impetuous, ſoon became the victim of his raſhneſs.

If the matador is an adept in his profeſſion, and calm, he contrives to irritate the bull, and the furious animal ruſhes blindly on the well-directed point.

The part firſt aimed at, is the cerebellum, or that part of the ſpinal marrow, which is contiguous to it, and the ſword enters between the vertebræ, or where the laſt of theſe is united to the head. With this blow the creature ſtaggers, and, without loſing one drop of blood, falls lifeleſs to the ground. If this ſtroke is not practicable, the ſword is directed to the heart, and death, although ſpeedy, is not quite ſo

ſudden,

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ſudden. Sometimes it happens, even when Coſtillaris holds the ſword, that he has not found the vital part. I ſaw him bury the weapon up to the very hilt; but, as the point did not penetrate the thorax, it only glanced along the ribs, and after a few minutes, was ſhaken out by the frantic animal. One day he miſſed his aim, and the bull received him on his horn; he was toſſed twice before he could be delivered, but he was not much hurt; yet his honour had received a ſtain, till, on meaſuring the horns, after the animal was dead, he ſhewed the ſpectators that the horn by which he ſuffered, was two inches longer than the other. Upon this diſcovery, he received loud applauſe.

It is wonderful that this accident does not often happen, conſidering the length of the horns, which in ſome bulls, from point to point, is near five feet. I never ſaw ſuch horns in England.

When the bull has at any time cleared the arena, he tears up the ground with fury; and when he has killed a horſe, if unmoleſted by the chulos, he tramples indignant on his enemy.

The

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The moment the poor creature falls at the feet of the matador, the trumpets ſound, and three mules enter to drag him off.

The bull feaſts are every week, frequently twice in the week during the ſummer; and each day ſix victims ſuffer in the morning, twelve in the evening.

Formerly they uſed high bred horſes, and loſt few of them; but ſince they have adopted a different ſyſtem, many are killed at every bull feaſt. It happened once that ſixty horſes periſhed in one day. For theſe they give, upon the average, only £. 3 ſterling; whereas the bulls are reckoned at £. 8 each. The ſtated expences are enormous; but I have my accounts from the beſt authority:

	£.	s.	d.
The alguazils, the guards, and attendants, coſt per day, in ſterling, - - -	27	15	0
The two matadors in chief -	30	0	0
The two inferior matadors -	14	0	0
The 8 banderilleros, at £. 3 each - - - -	24	0	0
The two picadors - - -	27	0	0

If

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If more are required, each receives for the morning £. 6, for the evening, £. 7 10s.			
The mules, drivers, and other expences - - -	18	12	0
The eighteen bulls, ſuppoſe at £. 8 - - - -	144	0	0
Suppoſe 17 horſes, at £. 3 -	51	0	0
	£. 336	7	0

The prieſt who attends to adminiſter the ſacrament, receives no pay.

To compenſate for this expence, and to yield a balance in favour of the general hoſpital, to inſtance only one day, 3 July, 1786, the receipts were as follow:

Collected for the ſeats, and for people to ſell water - -	605	13	6
Received for the 18 dead bulls	70	4	0
Received for 17 horſe ſkins -	6	14	6
	£. 682	12	0

The week following the receipts were more than eleven hundred pounds; but the average

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average may be fairly ſtated at ſeven hundred pounds a day, leaving a balance of near four hundred pounds a day for the ſervice of the general hoſpital at Madrid.

The price of admiſſion differs conſiderably, according as you are covered or expoſed, in the ſun or in the ſhade. A box for the day, which may conveniently accommodate eight or ten people in the ſhade, will coſt £. 3 12 *s*; but in the ſun, £. 1 16 *s*; and between both, £. 2 8 *s*. Faſhionable people take a box. A ſeat, if covered, in the ſhade, and in the front bench, coſts 7 *s*. 3 *d*. for the day; but a back ſeat in theſe covered benches, on the ſunny ſide of the theatre, is only three ſhillings. The cheapeſt ſeat for the day, expoſed to all the inclemencies of the weather, to rain, if it ſhould rain, and to the overwhelming heat of the ſummer's ſun, is ſomething more than 1 *s*. 2 *d*.

The fondneſs of the Spaniards for this diverſion is ſcarcely to be conceived. Men, women, and children, rich and poor, all give the preference to it beyond all other public ſpectacles; and, for my own part, I am ready to confeſs, that the keeneſt ſports-

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man can not be leſs attentive to his danger, or to the ſufferings of the game he is purſuing, than I was to the ſufferings of the bull, or to the danger of thoſe by whom he was attacked; nay, ſo inattentive was I to my own danger, that, although by a ſhivering I knew that I was taking cold, I had not reſolution to retire.

My cold was attended by an ague, and this again was followed by an ulcerated throat. However, by the aid of don Antonio Gimbernat, an able ſurgeon, and moſt amiable man, I got through it, and, at the end of a month, was well enough recovered to leave Madrid, where the ſcorching ſun became inſupportable.

The contrivances to moderate the heat, are excellent. They have mats and canvaſs on the outſide of their windows to exclude the ſun, and during the day they keep the ſhutters cloſed, ſo as to admit the ſmalleſt quantity of light, having previouſly, before the riſing of the ſun, admitted a ſupply of freſh air ſufficient for the day, and ſprinkled the whole houſe with water.

By theſe means their rooms, if not frequented, are kept cool and freſh during the moſt

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moſt ſuffocating and ſcorching heat of ſummer, even at Madrid. In one of theſe they ſit all the morning; in one they dine, and this commonly is the worſt apartment in the houſe; in one they ſleep their ſieſta after dinner; and, in the beſt, the company aſſembles for the evening.

The freſhneſs of theſe apartments has made me often think that diſcomforts and inconveniences, if decidedly intolerable, are much to be preferred to thoſe, to which patience and moderation may be reconciled: becauſe, when by neceſſity men are rouſed to action, there are few evils for which they can not find a remedy, and few difficulties which they can not finally ſurmount.

By theſe contrivances, and by keeping within doors, the day paſſes pleaſantly away. This however is not all that a traveller requires. If he will gain information, he muſt not ſtay at home. With this idea, I haſtened my departure from Madrid, and ſoon made a party for the north of Spain, taking for my companion, my amiable young friend, the cadet with whom I had travelled from Barcelona to Madrid. As I was to viſit his native province, I took no

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letters, but a few from count Campomanes, who likewiſe was from that part of Spain. Had I made application, I might have had many more; but theſe I thought would be ſufficient; and ſo I found them.

Before I left Madrid, I enquired the price of proviſions, which I found to be as follows: beef, fourteen quarts (which is a fraction under four pence) per pound; mutton, fifteen quarts, which is a fraction more than four pence; veal, thirteen quarts; pork, twenty quarts; cheeſe, twenty; bread, $6\frac{1}{2}$ quarts, for the fineſt at the king's oven, and $3\frac{1}{2}$ for brown bread, at the common ovens. Here it may be remembered that $8\frac{1}{2}$ quarts make a real vellon, which is equal to $2\frac{5}{64}$ penny Engliſh. Wine is eight quarts for a quartillo, which is ſomething more than a pint, or $1\frac{1}{17}$ pound weight. Labour is five reales, or one ſhilling, a day.

JOURNEY

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JOURNEY

FROM

MADRID TO THE ASTURIAS.

ON Saturday, July 22, 1786, my young friend, with the agent of his family, and myſelf, ſet out in two little chaiſes, leaving Madrid ſoon after midnight, to avoid the heats, which are intolerable in the middle of the day. By this arrangement we eſcaped one evil to fall into a greater, for which we were not well prepared; becauſe, the chaiſes being open, the night intenſely cold, and the north wind in front, it was difficult to preſerve the vital heat till the riſing of the ſun.

Before eight in the morning, we advanced five leagues over a level country, covered with granite ſand, and having reached the mountains, conſiſting of friable white granite, we came to Galapagar, two leagues beyond the Guadarrama.

From hence we ſaw before us a ſecond chain of mountains, covered with ſnow,

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and in them diſcovered the ſource of that chilling blaſt which had made us ſhiver in the night.

The whole country was alive; all were buſily employed in bringing home their harveſt. The waggons are drawn by oxen, and the wheels are ſhod with wood inſtead of iron. It is ſurpriſing to ſee what heavy loads two oxen will draw, puſhing with their foreheads againſt a croſs beam faſtened to their horns.

The country is open, and badly wooded, although both elm and aſh ſhew the moſt luxuriant growth.

At the end of about ſeven leagues, or ten hours journey from Madrid, we begin to aſcend the chain of mountains ſeparating New from Old Caſtile; and in two leagues more, having paſſed the Puerto de Guadarrama, find a good venta on the northern declivity of theſe granite mountains. In this venta we meet with comfortable beds; and, to prevent diſputes, the price of every thing is fixed by government. A turkey is eight reales, or about 1*s.* 7*d.*; a pullet, ſix reales; a young fowl, three reales and ſeventeen maravedis, or about ten pence halfpenny; nothing can be more reaſonable; but

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but the misfortune is, they are ſeldom, if ever, to be had. However we had no reaſon to complain.

Soon after midnight we aroſe, took our chocolate, and proceeded on our journey. The pleaſanteſt meal we made was our breakfaſt, on cold ham, which we took with a keen appetite under the firſt ſhade we found after the ſun was up.

The country we paſſed over is little ſuſceptible of culture, being chiefly either white granite decompoſed, or the hard grey granite, reſiſting all the powerful ſolvents which nature can employ, and remaining rugged, without the leaſt ſign of vegetation. Yet, in the midſt of this wide waſte, are ſome fertile ſpots, either covered with ilex, or broken by the plough; and even ſome extenſive downs.

This morning we travelled three leagues, to *Villacaſtin*, and there repoſed all the middle of the day.

This village contains two hundred and eighty houſes, and ſixteen hundred inhabitants. It has only two convents; one for men, the other for women. Here are two hoſpitals for the ſick, and for the travelling poor. This circumſtance may ac-

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count for the great proportion of funerals, being about fifty in the year, whereas the births do not exceed forty. This village has one pariſh church, and four chapels ſtanding, beſides five more fallen to decay. Here we ſee two extenſive buildings for ſhearing the Merino flocks. For want of ſtreams, their corn is ground by windmills.

At Villacaſtin we loaded our piſtols, being to paſs through a foreſt, famous for robbers, and marked with monumental croſſes. Unfortunately, my driver took the lead, and left the other carriage out of ſight. We had aſcended the mountain, and were got into the thickeſt of the foreſt, when at a diſtance, to the right, I ſaw two fellows with muſkets croſſing with haſty ſteps to meet us. They ſoon came up to us, and the driver ſtopped. Theſe were two beggars, who exacted money from all paſſengers, under pretence of having protected them from thieves. The account they gave of themſelves was, that they were of a family which had been commiſſioned by Philip V. to guard this dangerous paſs; yet, ſurely if employed by government, they ſhould wear ſome uniform, or at leaſt have ſome badge to diſtinguiſh them from robbers.

This

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This foreſt is of ilex.

At ſeven in the evening we arrived at *San Chidrian*, having this day travelled ſeven Spaniſh leagues, or, as I imagine, more than five and thirty miles.

In all this country the white wine is excellent, not ſo ſweet and ſpicy as that of Foncarral, near Madrid, but equally delicate in its flavour.

From San Chidrian we traverſed a vaſt plain of granite ſand, very coarſe, looſe, and unprofitable, although it would evidently bear good elm and fir. Wherever this ſand will pay for tillage, they make it yield wheat and barley. They are now reaping, and as faſt as they reap, they tread out the grain with mules, horſes, oxen, and the *trillo*.

The trillo is made with planks of about three inches in thickneſs, and is five feet long, by 2 ½ feet wide; the under ſurface is ſtudded with gun flints, to the number of about two hundred, for the purpoſe of cutting all the ſtraw to chaff, and diſengaging all the grain. The perſon who drives the horſe, ox, or mule, round the floor, either ſits or ſtands upon the *trillo*, and the operation is called *trillar*.

When the corn is cleanſed by the wind,

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it is immediately put into the granaries, without fear of its heating there, becauſe, when it is reaped, it is as dry as ſhot, and the country is far from being damp.

The general colour affected by the peaſants in this province, as in many other parts of Europe, more eſpecially in Wales, is brown, but the genteel people are fond of black.

Having paſſed the villages of *Adanaro*, *Hontoria*, and *Gutierre-Munoz*, we arrived about nine in the morning at *Aribalo*, a conſiderable city, with eight pariſh churches, beſides one in the ſuburbs, eight convents, two hoſpitals, two royal granaries, forty-two prieſts, and ſixteen hundred houſes.

From hence we paſſed over a plain of granite ſand, and croſſing the river *Adaja*, which runs north into the Duero, we came through vineyards to *Ataquines*.

Even in the moſt deſolate part of this route, a plantation of firs, and one majeſtic elm, ſhew what the country can produce.

Ataquines is a miſerable city, and might be eaſily miſtaken for a village. The cottages, low, and badly built of brick, with ſheds before them, are in number two hundred and ſeventy, to lodge eight hundred

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dred people. The births, on the average, are forty-five; and the burials, twenty, of which moſt are children in the ſmall pox. Here are four prieſts. It is remarkable that they have eight hundred oxen. Bread is ſold at four quarts the pound of ſixteen ounces; beef, eight quarts, or two pence farthing Engliſh; mutton they have none; wine is about one penny the quart. The church is built of brick, ſupported by granite pillars, and is lighted by maſſive ſilver lamps. The gold and ſilver of Peru and Mexico found their way into this city, but, for want of taſte, this unexpected diſplay of wealth excites nothing but diſguſt.

This country, with induſtry, good government, and a market for its commodities, might be rendered one of the richeſt in the world. It ſtretches, without mountains, far as the eye can reach; it abounds with rivers, and it enjoys the ſun; yet, with all theſe advantages, the farmers, for want of watering their crops, get only ten for one upon the ſeed. Their plough is antiquated, like that laſt deſcribed. Here flocks of ſheep abound.

This morning we traverſed the plain

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three leagues, to *Medina del Campo*, on the Zapardiel, a little river communicating with the Duero, between Toro and Tordeſillas.

Medina has nine pariſh churches, ſeventy prieſts, ſeventeen convents, two hoſpitals, and at preſent only one thouſand houſes. The collegiate church, built of brick, is much and deſervedly admired for its roof. This city ſeems evidently going to decay. The houſes are all of brick, irregular, and low. It was formerly the reſidence of kings, and contained fourteen thouſand families, but during the civil war it was nearly reduced to aſhes. It appears that Cardinal Ximenes had made this city one of his principal magazines for military ſtores, collected with a view to curb the great nobility: but when (A. D. 1520) the commons of Caſtille ſought redreſs of grievances, they ſeized this magazine, and defended the city with ſuch obſtinacy, that they forced Fonſeca to retire and to leave them in quiet poſſeſſion of the ruins.

The ſurrounding country is naturally fertile, and it is evident that elms, poplars, mulberries, vines, and olives, if planted, would flouriſh here.

From

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From hence we turned to *Valdeſtillas*, four leagues, over a moſt beautiful country abounding with corn and wine, not hilly, but gently ſwelling; all open, and deſtitute of trees, yet able to bear the moſt lofty elms. The ſoil is ſtill granite ſand, mixed with ſmooth round gravel, ſuch as may be well expected near the conflux of ſo many rivers here aſſembling from three points of the compaſs, from the eaſt, from the north, and from the ſouth.

Valladolid was fixed upon as our reſting place in the middle of our journey, and I was not diſpleaſed with the arrangement, becauſe this venerable city is highly intereſting to a traveller.

Here I was ſo happy as to meet the marquis de Mos, a nobleman of Gallicia, grandee of Spain, and colonel in the army, who had done me the honour to notice me at court, and now took me under his protection. He had taken a houſe here only for the ſake of being preſent to proſecute a ſuit in chancery.

Valladolid is a conſiderable city, having an univerſity, colleges, cathedral, palace, courts of juſtice, and one of the two high courts

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of chancery. Upon paſſing the firſt gate, you find a ſpacious area, bounded by ſeventeen convents; from hence, entering through the ſecond gate, the city ſtrikes you with every appearance of antiquity. The Plaza Mayor, or great ſquare, is ſpacious and venerable; yet, compared with the great body of the city, it is evidently modern. The cathedral, built by Juan de Herrera, is maſſive, heavy, and, in my mind, far from elegant. It has the Grecian arch, and the pillars in front are Doric. The treaſures of this church are great; the *Cuſtodia*, by Juan de Arfe, is of ſolid ſilver, and more than ſix feet high; the other ornaments and jewels are innumerable, and the whole together is ineſtimable; yet the biſhop has not more than five thouſand pounds a year. This city has fifteen pariſh churches, with five annexed, forty-ſix convents, two hundred and twenty-ſeven prieſts, ſix hoſpitals for the ſick, for infants, and for lunatics, five thouſand families, and twenty thouſand ſouls.

The univerſity has more than two thouſand ſtudents, forty-two profeſſors, and fifty doctors, diſtributed in ſeven colleges. In the

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the year 1346, this ſeminary was inſtituted by D. Alonzo XI.; and A. D. 1784 to 1785, there entered and were matriculated, 1299 ſtudents.

They have here as in other cities a free ſchool for drawing.

The church and convent of St. Benito are worthy of attention; but the public edifice, in my opinion, moſt to be admired, is the church of San Pablo, near the palace, whether we conſider the elegance of the whole, or the high finiſhing of the baſſo relievo figures and ornaments, which, after a lapſe of three hundred years, ſeem to have ſuffered little by their expoſure to the weather. In this building the quadrangle of the novices deſerves the higheſt praiſe.

The king's palace, rather elegant than grand, is ſtill preſerved; but all the palaces of the great nobility are going to decay.

Here Charles V. received the news, that his victorious troops had taken Rome, and made the pope his priſoner; and from hence he ordered prayers to be offered up in all the churches of Spain for the deliverance of the ſovereign pontiff. In this city his ſucceſſors kept their court, till Philip IV. removed it to Madrid.

The

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The buildings are chiefly brick, but ſome are of limeſtone. Among the materials, no inconſiderable quantity of granite, brought from the neighbourhood of Villacaſtin, at the diſtance of thirteen leagues, with many hundred pillars of the ſame, remain as monuments of ancient ſplendour.

All the public walks are lined with trees.

The country round this city is a perfect garden, watered by norias. It produces white wine of a good quality, excellent madder, ſome ſilk, and a few olives. All theſe productions will increaſe, when they ſhall obtain a vent in foreign markets.

At preſent the poor are numerous, fed by the convents, and manifeſt the wretchedneſs of this once flouriſhing metropolis.

It is fallen indeed, but on the projected canal we may evidently read *reſurgam*. This undertaking, once regarded like the wild projects of the giants, will, in all probability, and at no diſtant period, be accompliſhed, provided Spain has the wiſdom not to be engaged in war.

The

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The canal begins at Segovia, ſixteen leagues north of Madrid, and is ſeparated from the ſouthern canal by the chain of mountains which we paſſed at Guadarama. From Segovia, quitting the Ereſma, it croſſes the Piſuerga, near Valladolid, at the junction of that river with the Duero, then leaving Palencia, with the Carrion to the right, till it has croſſed that river below Herrera, it approaches once more the Piſuerga, and near Herrera, twelve leagues from Reinoſa, receiving water from that river in its courſe, it arrives at Golmir, from whence, in leſs than a quarter of a league, to Reinoſa, there is a fall of a thouſand Spaniſh feet. At Reinoſa is the communication with the canal of Arragon, which unites the Mediterranean to the Bay of Biſcay; and from Reinoſa to the Suanzes, which is three leagues, there is a fall of three thouſand feet.

Above Palencia is a branch going weſtward, through Beceril de Campos, Rio Seco, and Benevente, to Zamora, making this canal of Caſtille, in its whole extent, one hundred and forty leagues.

They have already completed twenty leagues

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leagues of it, from Reinoſa to Rio Seco; which, with twenty-four locks, three bridges for aqueducts, and one league and an half of open caſt through a high mountain, has coſt thirty-eight millions of reales, or three hundred and eighty thouſand pounds ſterling; and this, ſuppoſing the twenty leagues equal to eighty-eight miles, is £. 4,318 per mile. For work executed in ſo complete a manner, this certainly is not extravagant.

To expedite this arduous undertaking, they employ two thouſand ſoldiers, and as many peaſants. The former receive three reales a day, beſides their uſual pay, that is when they work by the day; but they work moſtly by the piece. To regulate the prices, they have three tables, 1ſt, for the quality; 2d, the depth; 3d, the diſtance; all founded on experiments. The qualities are, 1ſt, ſand; 2d, ſoft clay; 3d, hard clay; 4th. looſe ſchiſt; 5th, hard ſchiſt, and ſolid rock; of which, they make three diſtinctions, viz. ſuch as can be worked, 1ſt, by the pick and ſhovel; 2d, by wedges and ſledges; 3d, by boring and by blaſt. This laſt again is ſubject to diſtinctions.

The

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The canal is nine feet deep, twenty feet wide at bottom, and fifty-ſix at top.

When this canal is perfected, which may be in leſs than thirty years, the world, perhaps, will have nothing of the kind to be compared with it, either in point of workmanſhip, of extent, or of utility. The two firſt ſpeak for themſelves; the laſt can be obvious only to thoſe who have ſeen this country. To ſay nothing of coals, to be carried from the Aſturias to the ſouth, and of manufactures which might then be eſtabliſhed in Caſtille, and find a ready market by the Bay of Biſcay, the excellent wines of that ſandy province, now ſcarcely paying for cultivation, would not only find a ready ſale, but would be in the higheſt eſtimation; the oils would fetch their price, both for the table and for ſoap; and the corn, which in abundant ſeaſons proves the ruin of the farmer, would be a ſource of opulence, and ſtimulate his induſtry to freſh exertions.

For want of ſuch an outlet, provinces deſigned by nature to rejoice in plenty, and to furniſh abundance for exportation, are often reduced to famine, and obliged to purchaſe

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corn from the ſurrounding nations. Conſidering ſuch undertakings, and ſeeing them either languiſh for want of men and money, or not carried on with a ſpirit anſwerable to their vaſt importance, how natural is it to execrate the madneſs and folly of mankind, ſo often engaged in proſecuting unprofitable wars, from motives of covetouſneſs, or from the moſt idle jealouſy and groundleſs apprehenſions; ſpending thoſe treaſures for the moleſtation and abaſement of their neighbours, which might be more profitably employed for their own emolument and exaltation, if expended in agricultural improvements, and the general fomentation of their induſtry. The whole annual expence of this canal is not equal to the conſtruction of one ſhip of the line. Nay, we may venture to aſſert, that the men and money abſurdly ſpent by Spain in the proſecution of the laſt war, would have finiſhed forty canals equal to that I have been deſcribing. The diſcuſſion would be long, but the proof is eaſy. Money is ſoon reckoned, if we omit the multiplied calculations needful to eſtimate its value according to the various channels in which it flows,

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ſlows, and the purpoſes for which it is employed; but men are eaſily overlooked; yet not one of theſe who falls in the vigour of his age, can be reckoned, even in the firſt inſtance, at leſs than forty pounds, without taking into conſideration the contingent injury in the loſs of a ſubject, who might have lived to become the parent of a numerous offspring.

Before I left Valladolid I enquired into the price of proviſions. In this city, beef and mutton are twelve quarts the pound of ſixteen ounces; and bread is five quarts; wine is about a halfpenny the Engliſh pint. It muſt always be remembered, that eight quarts and an half make a real.

I cannot quit this city without making mention of a practice which the marquis de Mos aſſures me is common in Gallicia. He tells me, that in pleuriſies they give the ſeeds of ivy, bruiſed, to the quantity of two tea ſpoonfulls, repeated every eight hours, and that this ſimple medicine has been found to be infallible. I report it upon his authority, having never ſince had occaſion to preſcribe it.

Thurſday, *July* 27, we left Valladolid at

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ſive in the morning, and aſcending gradually a limeſtone hill for about half a league, we came to an extenſive plain, fertile in corn, but not well cultivated; yet ſome of the farmers upon this rich loomy ſoil, this mixture of clay, ſand, and calcareous earth, have moſt luxuriant crops. The thiſtles are rampant, more than eight feet high. The country is open, and void of trees; excepting near one little convent, which enjoys the extenſive ſhade of a few lofty elms.

Before noon, we came to a village, compriſing ſeventy miſerable cottages, called *la Mudarra*, built upon a fine limeſtone rock. Its ſituation is healthy; yet theſe ſeventy families contain only one hundred and twenty ſouls.

As we advance along the plain, towards Medina de Rio Seco, at the diſtance of about ſeven or eight leagues, the limeſtone rock becomes more deſtitute of ſoil.

Medina de Rio Seco already feels the influence of the canal, for though it ſtill wears the face of miſery in its buildings, yet the people ſeem more alert, and farther removed from that torpid indolence ſo viſible

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ble in other villages of Old and New Caſtille. Trade is increaſing, and manufactures begin to flouriſh, particularly thoſe of ſerge. It is to be lamented, that the ſilk ribbon weavers ſhould waſte their labour, by not adopting the modern improvement of the loom. The ſurrounding country abounds with corn and wine, and improves in the cultivation of the olive. All theſe commodities, with the manufactures, and the eaſy tranſport by the canal, have invited merchants to open houſes, and to bring new capitals into circulation here.

Medina had formerly ſeven thouſand houſes; it has now only twelve hundred; but, as theſe contain more than eight thouſand ſouls, it is evident that trade is briſk. Here are four convents for men, two for women, three pariſh churches, with forty prieſts. The churches are all good; that of S. Maria is elegant, with a lofty roof, highly finiſhed, and ſupported by well proportioned pillars. In this church the *Cuſtodia* is ſolid ſilver, and weighs more than one hundred weight. The church of *St. Franciſco* is rich in relics; but this, it muſt be confeſſed, is a periſhable commodity.

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From hence to *Manſilla*, eleven leagues and an half, the country is all level, open, rich, and productive of both corn and wine; abounding in villages, and occupied by huſbandmen. The route we took was through *Cedinos*, *Vecilla*, *Alvires*, *Matallana*, and *Santas Martas*. The former of theſe includes an hundred mud-wall cottages, and two churches; *Vecilla*, one hundred and ſixty ſuch miſerable habitations, with two churches, and ſix prieſts. This belongs to the Count of Altamira, a grandee of Spain. *Mayorga* has now only ſix hundred and fifty ſuch cottages; and although formerly it numbered ſeventeen thouſand, no traces of theſe remain. It is divided into eight pariſhes, and maintains twenty-four prieſts. Here are three convents, and one hoſpital. This town belongs to the young dutcheſs de Benevente. *Alvires* is wretched; *Matallana*, more ſo; *Santas Martas*, but little better; and *Manſilla* has no room to boaſt. All are equally of mud wall, and moulder-ing away.

The *trillo* is every where at work, ſome with oxen, others with mules. The plough reſembles the laſt mentioned, and exhibits a want

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a want of intercourſe with more enlightened provinces. The cart wheels have neither nave, nor ſpokes, nor felloes; but are only planks faſtened together, and turning with the axis. This uſually is eight inches in diameter. About Manſilla the wheels are bound with iron. We ſee only oxen in the teams.

Manſilla was once fortified, as may be ſeen by the round towers ſtill remaining. It contains four hundred families, one convent, and one hermitage. Here the dutcheſs of Alba appoints the magiſtrates.

From Manſilla the face of the country changes. On croſſing the Ezla we find meadows, incloſures, and a variety of trees, chiefly poplars, elms, and walnuts; then paſſing among hills compoſed of ſand, clay, and gravel, rounded by fluctuating waters, we fall down upon a rich valley, at the head of which ſtands *Leon*, protected by high mountains from the north.

We went immediately to the houſe of don Felix Getino, a canon of the cathedral, nearly related to my young friend, where we met with a moſt hoſpitable reception,

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Leon contains fifteen hundred families, with ſix thouſand one hundred and ſeventy ſouls, diſtributed in thirteen pariſhes, with four hundred and twenty prieſts, a cathedral, two royal foundations of S. Iſidro and S. Marcos, beſides nine convents, with a *Beateria* for nuns who are not ſubjected to vows, a few hermitages, and ſome hoſpitals.

The cathedral is deſervedly admired for its lightneſs and elegance. It is a gothic ſtructure, with a lofty ſpire, highly finiſhed, not only with baſſo relievo ornaments, but with open work tranſmitting light, and beautiful in its kind, reſembling the fineſt point lace or filigree. The windows are all of painted glaſs. In the ſacriſty is a ſilver crucifix, with its canopy ſupported by four Corinthian pillars, near ſeven feet high, the whole of ſilver. The ſilver mount on which it ſtands is divided into compartments, each exhibiting ſome repreſentation of the Paſſion in baſſo relievo. The cuſtodia is more than ſix feet high, made of ſilver, and elegantly wrought with images. The biſhop's revenue is 30,000 ducats, or about £. 3,295 ſterling, per annum. The

canons

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canons are forty, including always the king and the counts of Altamira.

When I came back from viewing the cathedral, I ſaw clearly that I had done ſomething wrong, becauſe our old canon, who had received me with a ſmile, now regarded me with horror, and even my young friend looked frighted. The fact was briefly this: having ſlit my nail, I inadvertently took out my knife, as I was walking, and pared it even. Had I been conſcious of what I did, I ſhould never have conceived that they, who ſpit in their churches without reſerve, could have been offended. But before my return, the report had reached the good old man, and made him tremble; yet, upon my ſolemn declaration that I meant no inſult, he became gradually calm, and, after ſome time, reſumed his wonted ſmile.

The religious houſe, or, *Caſa real de San Iſidro*, has ſixteen canons regular of St. Auguſtin. In their church are depoſited the bones of the patron ſaint, in a large ſilver urn, and the bodies of all the kings of Leon, from Alfonzo IV. ſurnamed the Monk, to Bermudo III. the laſt king of Leon,

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Leon, together with the aſhes of Ferdinand I. in whom the crowns of Caſtille and Leon were firſt united, and who died in the year 1067. Their library contains many valuable manuſcripts.

The *Caſa real de San Marcos* has a prior and ſixteen canons, ſupported by a revenue of eighty thouſand ducats, or about £. 8,789, per annum. The front of this religious houſe merits particular attention by all who viſit Leon. Various pieces of ſculpture in baſſo relievo are elegant, and highly finiſhed. Two of theſe repreſent the Crucifixion, and the Taking down from the Croſs. But one of the moſt ſtriking figures, with reſpect to deſign, execution, and expreſſion, is San Jago on horſeback.

All the churches in this city, like thoſe of Arragon, are crowded with pillars, and theſe pillars, nearly hid with moſt prepoſterous ornaments, ſuch as vines, cherubs, angels, and birds, which are covered entirely with gold.

Leon, deſtitute of commerce, is ſupported by the church. Beggars abound in every ſtreet, fed by the convents, and at the biſhop's palace. Here they get their

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breakfaſt, there they dine. Beſides food, at San Marcos they receive every other day, the men a farthing, the women and children half as much. On this proviſion they live, they marry, and they perpetuate a miſerable race. An *hoſpicio*, or general workhouſe, is almoſt ready to receive them; but ſhould alms continue to be thus diſtributed, preciſely the ſame number of lazy wretches will in time riſe up to occupy the place of thoſe, who ſhall be ſent into confinement.

The ſurrounding country is bold and beautiful, but ill cultivated. It is watered by the Torio and Verneſga, two little ſtreams, which unite below the city. Theſe in ſummer might be called brooks, in winter they are torrents.

With the rolling ſtones, hurried down from the mountains by the impetuous raging of theſe torrents on the ſudden melting of the winter's ſnow, a conſiderable part of the wall is built; forming a valuable collection for the naturaliſt, who wiſhes without labour to inveſtigate the nature of the country. Among theſe are found limeſtone, ſchiſt, and grit. All theſe prove,

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prove, by their extraneous foſſils, that the hills, from whence they come, were once in a ſtate of diſſolution, and covered by the ſea. The beſt marble is brought from Nozedo, Robles, and Lillo. The two firſt are diſtant five, the latter eleven leagues from Leon.

All the corn mills of this country have horizontal water wheels.

Butchers meat is nearly half the price which is given at Madrid.

Beef ſells for nine quarts the pound, of twenty ounces; which is a fraction under two pence ſterling the pound of ſixteen ounces.

Mutton, ten quarts ditto.

Bread, four quarts (or $1\frac{1}{8}$ penny) the pound of ſixteen ounces; ditto mixed with rye, $2\frac{1}{2}$ quarts, or $\frac{45}{64}$ of a penny ditto.

Labour is three reales, or a ſmall fraction more than ſeven pence a day; but artiſans get double.

Tueſday, 1ſt *Auguſt*, having ſpent three days with our hoſpitable canon, we left Leon; my young friend and his attendant mounted on horſes ſent for him by his father, I on a good hired mule. We were eſcorted

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eſcorted by ſome gentlemen who were related to my friend.

Our intention was to ſleep at a convent, in a little village five leagues from Leon, called *Terras de las Dueñas*. For this purpoſe we began our journey at four in the afternoon, paſſing along the valley by the ſide of the Verneſga, and aſcending towards the mountains, yet meeting nothing remarkable but large tumblers of grit or ſandſtone, till eleven in the evening, when, after riding ſmartly ſeven hours, we fell down upon our deſtined village.

Unfortunately for us, the nuns were gone to bed, and the porter would neither give us admittance, nor aſſiſt us with proviſions. Having counted upon being, as uſual, entertained for money at the convent, we had brought nothing with us; and inſtead of lively converſation with the lady abbeſs, who is famed for the ſprightly ſallies of her wit, inſtead of good wine, preceded by a good ſupper, and followed by good beds, we were obliged to retire without any thing to eat or drink but chocolate, to a miſerable hovel in the village, called

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called a posada, where we however found two beds.

This adventure, from one circumstance, gave me peculiar pleasure, as thereby I had occasion to admire the generosity of my Spanish friends, who all occupied one bed, and left the other wholly to the stranger.

Early the next morning we took our chocolate, and pursued our journey, winding through the gorges of the mountains, and descending with the Luna, a little river famous for its trout.

These mountains are of schist, capped with marble.

As we advance, the rocks become more bold, the schist disappears, and the marble rises to the height of three or four hundred feet, often perpendicular, but sometimes overhanging to a considerable extent.

In every little opening of the mountains, wherever a valley spreads wide enough to afford pasture for some cows, we find a village of ten, fifteen, or twenty houses; their numbers always bearing proportion to the quantity of food; and as the human race every where makes strong efforts to increase, we find the inhabitants climbing the

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the ſteep aſcent, to cultivate every ſpot where the plough can paſs.

Here moſt evidently their numbers muſt be limited, becauſe their food is ſo; and were they to eſtabliſh a community of goods, they muſt either caſt lots who ſhould emigrate, or they muſt all ſtarve together; unleſs they choſe rather to agree that two only in every family ſhould marry, and when a cottage became vacant, could find means to ſettle, which of the expectants ſhould unite to take poſſeſſion of it.

This ſubject will be renewed whenever occaſion ſhall preſent; but I have choſen thus briefly to diſcuſs it in this place, becauſe it is here confined within narrow limits; and being, like the firſt elements of every ſcience, eaſily comprehended, may aſſiſt us in purſuing our reſearches on the extent of population, where its combinations are not quite ſo obvious.

In theſe little vallies flocks of goats ſhew the nature of the adjacent country.

After winding among theſe bare and rugged mountains nearly five leagues, expoſed to a ſcorching ſun, almoſt ſuffocated with

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with heat, weary, and ready to faint for want of air, we came under the ſhadow of a great rock, which, on account of its reviving freſhneſs, we quitted with reluctance, and called to mind a poetic image, the force of which I had never felt before. The deepneſs of the ſhade, its vaſt extent, the diſtance from reflected heat, together with that degree of humidity which is needful to abſorb and make latent the heat of the ſurrounding atmoſphere, all this, and more than this, we find in one poetic image, " The ſhadow of a great rock in a weary land."

In more ways than one this rock gave employment to my thoughts. It was a grit or ſandſtone, remarkable for whiteneſs and the fineneſs of its grain. Had it been either ſchiſt or limeſtone, or had I found granite in the vicinity, I ſhould not have been particularly ſtruck with this rock; but upon finding grit, a wiſh ariſes in the mind to know from whence it came. That grit originates in decompoſed granite I have no doubt; but then near to theſe mountains I can find no granite. This difficulty is not confined to the rock, under whoſe

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whoſe ſhade theſe reflections roſe up in my mind; it equally occurs in every country, but in no one is more ſtriking than upon the Wiltſhire downs, more eſpecially near Aubury and Kennet, in the neighbourhood of Marlborough, where the great rolling ſtones of grit, called ſarcen and grey-whethers, cover the chalk to a great extent. Such phænomena will be the ſubject of a future diſcuſſion; but, for the preſent, it is time to turn our back upon this rock.

About the middle of the day we came to a village called Truovana, conſiſting of twenty-two miſerable cottages, belonging to the monks of the Eſcurial. We dined at their farm-houſe, where bread is provided for their ſhepherds. The flock conſiſts of twenty-eight thouſand ſheep, which in the ſummer feed upon theſe mountains, but in the winter travel to the ſouth. To tend this flock they employ two hundred ſhepherds; and for the purpoſe of feeding theſe they have a little mill with an horizontal water-wheel, working day and night, and an oven which is never cold, baking bread

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in the morning for the ſhepherds, and in the evening for their dogs.

The ſituation of this village is moſt romantic. It is a plain of no great extent, well wooded, well watered, and ſhut in by high mountains of marble, whoſe bare and rugged cliffs form a ſtriking contraſt with the rich verdure of the meadows, and of luxuriant crops of corn, whilſt the images reflected from the ſmooth ſurface of a river, gliding near the village, give a brilliancy and perfection to the whole.

The elm, the aſh, the poplar, and wild berberries, appear to be the trees moſt ſuited to the ſoil.

The natural beauties of the place made amends for the coarſeneſs of our fare. Had we proceeded, half a mile, to Villaſetano, we ſhould have been not only received with hoſpitality, but entertained with elegance, by don Ignatio Horenzano, lord of the village.

His habitation is rather neat than magnificent, but the ſituation is perfectly enchanting; much reſembling Truovana, only it is upon a larger ſcale. It is not poſſible

to

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to ſee meadows better watered, or richer than thoſe of this delightful vale.

Notwithſtanding we had ſo lately dined, we were compelled to eat ſome cakes, with ſweetmeats, and to drink ſome wine. When we had finiſhed our refreſhment, we found it difficult to get away without taking up our lodging for the night; but, as it was not conſiſtent with our plan to ſtay, we haſtened our departure, and proceeding along a valley, which is no where wider than four hundred yards, and ſhut in by high mountains, we followed the winding of a river to Piedrafita, where, in the houſe of don Cortheca Garcia de Atocha, we had no reaſon to repent our having declined the preſſing invitations at Villaſetano.

Piedrafita, a little village containing forty-ſix houſes, is ſed by a little valley, and ſurrounded on every ſide by mountains. The ſhepherds dogs are large and ſtrong, well qualified to engage the wolves, which are here in great abundance. They wear a ſpiked collar to protect the neck, and to prevent the wolf from fixing on that mortal part.

It is curious to ſee the women churning

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as they walk along, or ſtand chatting with a neighbour, each with a leather bag, in which they ſhake the cream till the butter is completely formed.

From this village we did not take the direct road to Oviedo, being diverted from the uſual route by a work of piety, to be performed in compliance with a vow made by the mother of my friend with her departing breath. This ſon, her firſt born, was then at Barcelona with his regiment, but although abſent ſhe bound him with a ſolemn vow, that before he ſhould return into his native province, he ſhould proſtrate himſelf before the altar of *noſtra Señora de Carraſconte*, where he ſhould pay four reales for a maſs, and give twenty to the poor. To fulfil this intention, we aſcended many miles among the mountains, till we reached a little village almoſt loſt in clouds, from whence, having accompliſhed the fond parent's vow, we returned by the ſame way, about one league, to find the proper road.

Among theſe mountains I was exceedingly ſurpriſed to ſee, on the third of Auguſt, ſnow ſtill remaining undiſſolved, and not

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not far removed from luxuriant crops of corn then fully ripe, and bending to the ſickle.

All the dogs in the little villages through which we paſs have ſpiked collars. Theſe are abſolutely needful, becauſe wolves abound in theſe elevated regions. In winter they become ravenous and bold; but even in ſummer they commit frequent ravages among the flocks by night, if either the ſhepherd or his dog are ſleeping ſoundly.

The baſis of all theſe mountains is ſchiſt, every where covered with limeſtone, chiefly blue. The rocks are wonderfully rent; the ſtrata are inclined in every poſſible direction; and the whole country appears to have been convulſed. Sometimes the ſchiſt appears elevated above the level of the adjacent mountains, ſtill capped with its limeſtone; at other times the inferior mountains ſeem to be all of limeſtone, yet in the deep ravins they diſcover ſchiſt; but upon none of them do we find the leaſt trace of granite.

At the Puerto de Somiedo, where the

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waters part, are a few miſerable cottages, which give name to the paſs.

From this we deſcend by a deep ravin, which diſcovers its native ſchiſt, but hurries down from a higher level vaſt rocks of limeſtone charged with foſſil ſhells. Here we find ourſelves ingulfed, as it were, by ſtupendous rocks; but where the country opens to the north, we look down upon mountains beyond mountains, to the diſtance of many miles, ſo aſtoniſhingly numerous, that the whole bears a perfect reſemblance to the ocean when it is vexed with a furious ſtorm. Immediately before us, where the little village of Gua appears as if ready to be ſwallowed up and buried by the waves, the impending rocks are magnificent beyond deſcription.

Lower down, at the diſtance of a mile, is *la Pola de Somiedo*, a village of one and twenty cottages, occupying a ſmall eminence, ſurrounded by about fourſcore acres of well watered meadows, and ſhut in by limeſtone rocks of a moſt ſtupendous height. Had Shakeſpeare ever paſſed this way, his imagination would never have looked towards Dover

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Dover cliff. This village, with its meadows, the little river, and high mountains, either naked and almoſt perpendicular, or covered with hanging woods, the goats leaping from rock to rock, and the cattle feeding peaceably below; theſe altogether make a pleaſing picture.

I had ſufficient time to exerciſe both my imagination and my pencil, for in this charming village we could get neither bread nor meat, nor eggs nor wine: as for meat and wine, theſe are delicacies they ſeldom taſte.

The ravin, through which our little river winds its courſe, alternately widens and contracts, being ſometimes not more than two yards acroſs, but, even where it is wideſt, never more than ſix hundred feet; ſometimes ſloping, and leaving a few acres for cultivation; at other times ſteep, and inacceſſible, except to goats; often rugged and bare, but not unfrequently covered thick with a variety of trees, ſuch as oak, aſh, beech, filberts, walnuts, cheſnuts, and that even where they have no viſible ſoil in which to fix their roots. The rocks themſelves are beautiful, more eſpecially when

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the ſmooth white marble is almoſt hid by foliage. Nearer to the water's edge, plumbs, mulberries, and figs, vary the ſcene, and mark the vicinity to ſome little village. The way among theſe rocks is wild beyond all imagination: ſometimes in the bottom and by the river's ſide, at other times climbing the ſteep aſcent, or deſcending from the heights, having on one hand a precipice of two or three hundred feet beneath, and on the other impending rocks, which threaten deſtruction to the traveller. Sometimes the river is pinched in between two rocks, and is out of ſight; at other times a man looks down, and catches a glimpſe of it ſparkling among the branches; but, whether viſible or inviſible, it is always heard roaring in the bottom. The way being rugged, and ſo narrow as to admit only of one mule, occaſions the apprehenſion of danger to be often more than a balance for the pleaſure, which would otherwiſe ariſe from theſe wild and moſt romantic views.

Near the level of the river, at the diſtance of two leagues from the Pola de Somiedo, the marble is charged with belemnites;

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nites; but ſoon after the limeſtone diſappears, being ſucceeded by the grit, or ſand-ſtone, ſome finely granulated, and almoſt equal to the Turkey ſtone for ſmoothneſs; other coarſe, and evidently compoſed of fragments, being a ſpecies of pudding-ſtone with both cement and charge ſilicious.

At the end of four leagues, or a little more than four hours riding, we came to *S. Andres de Aguera*, being ſtill in the ſame ravin, which here expands, and admits of more extenſive villages.

To deſcend into the Aſturias, from the kingdoms of Caſtille and Leon, there are other paſſes; but, I apprehend, every one of them is ſtrong.

From this circumſtance we may readily conceive, not only why the Moors, who, in three years, had ſubdued the reſt of Spain, could penetrate no further to the north, but why, upon the turning of the tide, the vanquiſhed never failed to make an impreſſion, and to puſh forward their conqueſts to the ſouth. The jealouſy of two weak and vicious princes had diſarmed the nation, and left nothing to reſiſt the impetuoſity of

A. D. 700 and 711.

its

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its fierce invaders, who, with their light cavalry, ſcoured all the open country, and diſplayed their victorious banners on the banks of all the principal rivers in the kingdom. But when they came to this chain of mountains, which, ſtretching eaſt and weſt, and ſeparating the north of Gallicia, with the Aſturias, Biſcay, and Guipuſcoa, from the reſt of Spain, had impeded the progreſs of nations equally warlike, of the Carthaginians, the Romans, and the Goths, their light horſe became abſolutely uſeleſs, and the Moors were obliged to ſet bounds to their ambition.

Here they were oppoſed by the infant don Palayo. On the death of Rodrigo, who was ſlain in battle before Xeres, not far from Cadiz, this prince had retired to the mountains, and by his valour ſecured the ſmall remains of a vaſt empire for his poſterity. And here the hardy race was formed, which, in ſucceeding ages, deſcending on the degenerate offspring of the Moors, drove them from the plains, and, in proceſs of time, that is, after a conteſt of ſeven hun-

A. D. 714.

dred

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dred and eighty years, expelled them from every fortreſs in the kingdom.

When we came to *S. Andres de Aguera*, we took up our lodging at the parſonage, where the good *Padre Cura* gave us a moſt hoſpitable reception. This living was given him by the biſhop of Oviedo, and is reckoned one of the beſt in his diſpoſal. The parſonage is a tolerable cottage, built and fitted up with little regard to comfort, and leſs to appearance. Aſcending five ſteps of unhewn ſtone, you enter a dark veſtibule of about three feet ſquare, which leads to the little kitchen on the left, or, if turning to the right, it conducts you to the hall. The former needs no deſcription; the latter is fourteen feet by twelve, with a rough floor, white walls, no ceiling; the furniture is an oak table, and two benches. This hall communicates with the ſtudy, a little room of ſix feet by five; and with the bed chamber, which is ſix feet ſquare, but this has no window, being placed between the ſtudy and the veſtibule. Under the ſtudy is a cellar, well ſtored with bags of wine, to which you deſcend through a trap door of ſmall dimenſions. The two maids ſleep in a little

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a little bed-room joining to their kitchen, and the aſſiſtant prieſt, in a little hovel out of the houſe, that, if ſent for in the night, he may riſe without diſturbing the good rector.

As ſoon as we arrived, we had chocolate and biſcuits. At night, ſome fat fowls, with plenty of good wine, made us amends for our ſufferings at noon. The beſt bed was given to the ſtranger, and the hoſpitable prieſt contrived ſome how or other to lodge all the reſt.

The day following was Friday, and therefore a faſt; but that made no difference to me, for this young prieſt was ſo polite and attentive as to provide a fowl. At dinner he gave me occaſion to admire his diſcretion: he wiſhed me to taſte the trout, as being the produce of the Luna, a river remarkable for trout; but the *homme d' affaire* of my young friend pulled away the diſh, and ſaid, "He can not eat fiſh, becauſe he "has been eating fleſh." "True," ſaid the prieſt, "we catholics muſt not touch "fiſh on a faſt day, if we have been eating "fleſh, but your friend is under no ſuch "obligation."

This

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This pariſh contains one hundred and fifty families, conſiſting of ſeven hundred communicants, beſides children under ten years old, ſcattered in nine little villages, of which ſeven are on the mountains, and two in this valley. With ſo many villages, the occaſional duty is exceedingly ſevere in winter, when the whole country is covered deep with ſnow. The births are thirty, and the burials twenty-five, upon the average.

A little lower down the valley ſtands *Aguerina*, where we ſee the habitation of cardinal Cienfuegos, with the little cottage in which he was born; but no modern cardinal would paſs a day in either.

Upon all theſe mountains the people affect brown cloth, and the women ſpin with a diſtaff. Their induſtry is moſt ſtriking; not as the offſpring of luxury, as in more favoured regions, but as the child of poverty and of ſevere neceſſity. Not one acceſſible ſpot is left uncultivated, and even the moſt ungrateful ſoil is forced to pay ſome tribute. The higher lands are ſown with wheat, the lower lands with Indian corn. The rock here is limeſtone, and, when burnt, is their principal manure.

In

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In this country as much land as a pair of oxen can plough in a day, or about half an acre, is worth one hundred ducats, or £.11 ſterling, nearly; and the rent of this they reckon ſhould be one fanega of wheat, or fifty-ſix pounds of bread, of twenty-four ounces to the pound.

Having nothing elſe to do, I amuſed myſelf with making drawings of Aguera and of Aguerina; after which I went with our good rector to his church, to view the body of S. Fructuoſo. It is to this body that thieves and murderers fly for protection from the avenging ſword; and ſhould they even reach the porch before they are taken, juſtice is diſarmed, and they may here dwell in ſafety. The church, indeed, may give them up, but not to death. Such an aſylum in the Aſturias does little harm, becauſe the inhabitants excel in gentleneſs and ſimplicity of manners; but, in other provinces, this privilege is attended with the moſt fatal conſequences.

On the mountains, I am told, are not only wolves, but bears, and a ſpecies of the tiger; all which, in the winter, are exceedingly ferocious. From the dread of theſe, the

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the ſhepherds conſtantly drive their flocks, conſiſting of ſheep and goats, into the villages by night; and when they are feeding on the mountains, they are attended by ſtrong dogs with ſpiked collars.

The price of proviſions:

Beef, eight quarts a pound of twenty-four ounces, which is three halfpence for ſixteen ounces.

Mutton, ten quarts, or $1\frac{7}{8}$ penny for ſixteen ounces.

Bread, five quarts, or $\frac{30}{32}$ penny ditto.

Labour, four reales, or $9\frac{9}{16}$ penny a day.

Saturday, 5 *Auguſt*, we left Aguera at four in the morning, and continued to deſcend three leagues in the ſame ravin, which might here be called a valley, and by the ſide of the ſame rapid ſtream, which we had traced from its origin near the ſummit of this vaſt chain of mountains. At a moſt romantic ſpot, called *Belmonte*, we paſſed over to the eaſt, quitted the ravin, and began croſſing all the maſures of the country. Here we found nearly the ſame trees

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as in the few preceding days; the filbert, chefnut, walnut, and the oak.

Afcending for near an hour, we reached the fummit of a mountain, which commands a vaft extent of country. This fudden change, after having been fo long confined within the precincts of a deep ravin, was like a refurrection from the dead. We began to breathe more freely, and looked round with pleafure to contemplate a new world before us; the whole country, with its verdure, its inclofures, and its produce, refembled fome of the richeft parifhes of England, and the little hills clothed with corn, or covered with wood, feemed to rejoice on every fide.

The prevailing rock is limeftone; yet we find fchift even on the higheft of thefe hills.

About the middle of the day we defcended to a circular plain of confiderable extent, every where fhut in by mountains, and watered by a little ftream, on the banks of which, nearly in the centre of the plain, is the village of *Grado*. From hence, after dinner, paffing with the river between two high

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high rocks, we purſued our way for ſome time along contracted vallies, then climbing from hill to hill we entered the fertile plain, at the head of which ſtands the city of Oviedo, and about ſun-ſet arrived at the biſhop's palace, the place of our deſtination.

The expences of this journey were as follow:

A calaſine to Valladolid, being thirty-two leagues, or about one hundred and ſixty miles, reckoned at five days out, one for reſt, and four for return, in all ten days, with fee to the driver, two hundred and eighty-four reales.

Ditto to Leon, for half a calaſh, one hundred reales.

A mule to Oviedo, five days, and return, one hundred and twenty reales.

Proviſions from Madrid to Oviedo, one-third, being my proportion, two hundred and ſeventy-two reales. The whole expence therefore in ſterling was £.7. 14s. 7½d. for a journey, which, if direct, would have been eighty-two leagues, but which, as I ſuppoſe, we made more than ninety leagues, or about four hundred and fifty miles, and

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in which, as we travelled, we employed fifteen days. The common expence, in this part of Spain, may be reckoned, for a calaſine, 5 *s.* 6 *d.* a day, allowing as much for the return, and about five ſhillings a day for living, not including the caliſero, who pays for himſelf.

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